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ORIGINAL ARTICLES.

STYPTICIN (COTARNINE HYDROCHLORATE) IN UTERINE HEMORRHAGE.¹

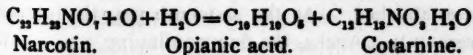
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PHYSICIANS are consulted nearly as often about uterine bleeding as about any other gynecologic disorder, and hence it is an important question as to how such symptoms should be treated. No remedy has yet been found which will act as a universal panacea therefor; nor can this be expected, because of the different indications for the employment of remedies. The fault is not with a respective drug, which is unvarying in its action under similar circumstances. The error is with the doctor, in failing to recognize the respective indications and on that account selecting the wrong agent to meet them.

For about eighteen months past I have been using stypticin (cotarnine hydrochlorate) in my practice, and during the past ten months have recommended others to try it on various occasions when there has been profuse menstrual and irregular bleeding from the uterus. After giving this agent a conscientious trial for the time mentioned I find that some of my experience accords with that of other physicians who have reported their observations, while in some instances it is at variance. Stypticin² is a convenient name given to the hydrochlorate of cotarnine by its discoverer, Professor Martin Freund of Frankfurt-on-the-Main, on account of its hemostatic properties. Cotarnine is a fractionation product by oxidation of narcotin, an alkaloid obtained from opium. Wöhler demonstrated that narcotin, under the influence of oxidizing agents, can be separated into an acid, "opianic acid," and a base, "cotarnine," after the following formula:



¹Read at the Ninety-third Annual Meeting of the New York State Medical Society, held at Albany, January 31 and February 1 and 2, 1899.

²Cotarnine hydrochlorate: Yellow crystals soluble in water. Hemostatic, uterine sedative. Uses: Uterine hemorrhage, dysmenorrhea, fibroids, subinvolution, climacteric disorders, etc. Dose: 1-2½-5 grains, four times daily, in capsules or pearls. Injection (urgent cases): 1-3 grains in ten-per-cent. solution. — [Merck's 1899 Manual of the "Materia Medica," page 74.]

As thus obtained, cotarnine is easily converted into its hydrochlorate (stypticin), which occurs usually as microcrystalline yellow powder, with an intensely bitter taste, and soluble in water, the solution becoming darker on exposure to light. Freund came to the conclusion that inasmuch as the course of the chemical decomposition by which cotarnine is obtained is similar to that followed in forming hydrastinin, its physiologic and therapeutic actions must also resemble those of the latter.

Hydrastin, $\text{C}_{11}\text{H}_{12}\text{NO}_3$, is separated into opianic acid and hydrastinin, $\text{C}_{11}\text{H}_{12}\text{NO}_2 \text{H}_2\text{O}$ —showing that cotarnine is, chemically, hydrastinin, in which, for one atom of displaced hydrogen, the methoxyl group OCH_3 , has been substituted. This having been determined, physiologic, and therapeutic experiments were made. For the latter the new drug was referred to Dr. Sigmund Gottschalk of Berlin, who read a paper on the subject before the Gynecological Congress in Vienna in 1895.³

Physiologic Action.—For the details of experiments as to the physiologic action I refer to the valuable contribution of Edmund Falk⁴ of the Pharmacological Institute of Berlin, and cite only his conclusions:

"1. In cold- and warm-blooded animals it produces paralysis by its action on the motor sphere of the spinal cord. In the warm-blooded a complete paralysis occurs late, usually only prior to death.

"2. It produces in the warm-blooded, by its action on the cerebrum, a mild narcotic state, but not sleep nor complete narcosis.

"3. In rabbits and dogs it is productive, by both internal and subcutaneous administration, of intestinal peristalsis and fecal evacuations.

"4. It has no direct primary influence in the warm-blooded on the heart, circulatory system, or blood-pressure. The effect on the heart, pulse, and blood-pressure are of secondary nature, through the influence of cotarnine on respiration: only in very large doses with long-continued artificial respiration, a weakened heart-action is produced.

"5. Its action on the respiratory center after transitory irritation is paralytic; respiration is, therefore, increased at first, but subsequently rapidly sinks to a quietus.

³Sigmund Gottschalk, "Das Stypticin bei Gebärmutterblutungen," *Therapeut. Monat.*, December, 1895.

⁴Edmund Falk, *Therapeut. Monat.*, January, 1896.

"6. Fatal termination is produced by paralysis of the respiratory center, but can at any time be kept in abeyance by artificial respiration."

Ronse and Walton¹ explain the similar therapeutic properties of stypticin and hydrastinin on the theory that both drugs augment cardiac activity, and by their oxytocic properties. According to these observers the difference between hydrastinin and stypticin is that the former causes circulatory modifications more rapidly, acting on the heart and abdominal vessels at the same time, while the action of stypticin seems limited to the heart and is much later. They also find that stypticin slows the action of the heart in the frog and rabbit, whereas it exerts an accelerating influence in the dog; hence they utilized the latter animal in their later experiments. They find, contrary to the opinion of Falk and Marfori², that stypticin exerts a tonic action on the circulatory system. Comparing it again with hydrastinin they find this acts as a stimulant on the heart, like camphor and ether, whereas stypticin can be compared in its action on the heart to digitalis; hence the difference in their indication when these drugs are to be used in the control of hemorrhage. All observers agree that stypticin causes fatal termination by its paralyzing effect on the respiratory center.

Personal Observations.—After thus having stated the principal observations recorded as to the physiologic action of stypticin, I beg to place before you my personal experience with its therapeutic employment, most of which was made before seeing the literature on the subject. It was due to a simple request on the part of Dr. W. Freudenthal to try stypticin in cases of uterine hemorrhage, because he had seen good results from it in bleeding from the respiratory tract. The drug was supplied to me through the courtesy of Merck & Co., and a small quantity also by Professor Freud, to both of whom I hereby express my appreciation therewith.

I shall first classify the conditions in which the drug has been used by me, and then give further details:

1. Prolonged and profuse menstruation in unmarried anemic subjects, without any discernible change in the pelvic organs—nine cases.
2. Fibromyomata causing meno- and metrorrhagia—four cases.
3. Inoperable cancer—five cases.
4. Para- and perimetritis after abortion—three cases.

¹ Ronse and Walton, *Archiv Intern. de Pharma.*, vol. iv, Fasc. iii and iv, 1898.

² Marfori, "Sur l'action biologique de la Cotarnine," *Arch. Ital. de Biol.*, xxviii, 2, p. 19.

5. Para- and perimetritis after full-term deliveries—two cases.

6. Profuse and prolonged menstruation in multiparae without anemia and without changed endometrium, but moderate enlargement of the ovaries—eight cases.

7. Irregular bleeding after the puerperium without retention of decidua or placenta, these having previously been removed with the curette—twelve cases.

8. Irregular bleeding after the puerperium with retention of small areas of placental tissue—two cases.

9. Hemorrhagic endometritis—eight cases.

10. Fungous endometritis—two cases.

11. Retroflexion with chronic endometritis—two cases.

12. Chronic metritis and endometritis—seven cases.

13. Irregular bleeding in multiparae at the menopause—five cases.

14. Irregular bleeding without any discoverable cause—one case.

15. Subinvolution, present six weeks to four months after delivery—eleven cases.

16. Perimetritis and parametritis due to trauma-tism—three cases.

17. Bleeding during pregnancy—three cases.

The material for these observations was derived from my clinics and private and consultation practice. A few instances of patients who presented themselves in one of the clinics and did not return for observation are excluded from the list. The method of administration employed was principally per os, and the doses varied from half a grain to five grains until during the past two months, when subcutaneous injections were used almost entirely.

Having enumerated the classes, it is superfluous for practical purposes to give the details of each individual case, and I deem it sufficient for all clinical ends to describe one case of each group, and then to give the results of the respective class as a whole.

1. *Menorrhagia in Virgins without Detectable Changes in the Pelvic Organs.*—A. J., aged twenty years. Menstruation began at thirteen; had been regular for 5 months at intervals of $3\frac{1}{2}$ to 4 weeks; then ceased for nearly a year, when the flow became re-established. At the sixteenth year the intervals were only 3 weeks, the flow continuing 5 to 8 days, being profuse and painful. Two days before the anticipated flow half-grain doses of stypticin was administered at intervals of 12 hours. When the flow appeared the drug was given in $\frac{3}{4}$ -grain doses at intervals of 4 hours during the first day without effect; on the second day $2\frac{1}{2}$ grains was prescribed at intervals of 2 hours for three days, with the result

that the flow diminished on the same day. No amelioration of the dysmenorrhea during the continuance of the flow. Total consumed, 15 grains.

The other eight patients of this group were put on doses of 1.5 grains every 2 hours for 4 doses at the first sign of the flow, with somewhat similar beneficial effect as to the quantity of the blood lost; but there was no marked decrease of the dysmenorrhea in either of the other two patients who also suffered from this symptom. In three patients the treatment was necessitated again at the subsequent period, with similar result; two remained symptomatically well, and in four the control was lost.

2. Fibromyomata.—In only one instance the flow was somewhat diminished, with a decrease of pain at the time of menstruation; in the others the effect was absolutely negative, despite the administration of 1.5 grains of the drug subcutaneously in the lumbar region.

3. In Hemorrhage Due to Cancer.—The effect was negative in each instance.

4. Hemorrhage from Peri- and Parametritis after Abortion.—Rosa Z., aged twenty-three years, married three years, was infected during the beginning of her matrimonial period with gonorrhea. One pregnancy with abortion at the third month. Uterus normal size; physiologic anteflexion, not freely movable; induration on either side and posteriorly; bleeding at intervals of 2½ to 3½ weeks, painful, of 9 to 12 days' duration. Administered ¾ of a grain every 3 hours; six doses without marked effect; Given 1.5 grains subcutaneously twice with marked effect; was, however, subsequently operated upon on account of the intermenstrual pain, and the inflamed adnexa removed. Of the other two patients one was improved, the other cured.

5. Hemorrhage Due to Pelvic Inflammation after Full-Term Delivery.—In both cases the condition was promptly ameliorated and hemorrhage ceased on the third and on the fifth day; the patients had been bleeding 10 and 12 days, respectively.

6. Menorrhagia with Chronic Oophoritis.—Mary D., aged twenty-three years; had had two children, the last fourteen months previously. Three months after delivery she again began to menstruate, but, whereas formerly the period lasted 3 to 4 days, it now continued 8 to 9 days, and the loss of blood was much larger. Stypticin on the first day diminished the quantity, and on the third day menstruation ceased entirely. In other cases of this class the remedy had a similar effect; in one none at all; and two patients were lost from further observation after improvement had been produced.

7. Irregular Bleeding after the Puerperium, without Retention of Decidua or Placenta.—In all of the

cases in which, after the diagnosis of retained placental particles or decidua had been made and confirmed by operation, but which still continued to bleed, the remedy had a most astonishing effect.

Katie F., aged twenty-nine years, four days after confinement was still bleeding; examination showed the uterus to be large and soft, the cervix patulous. By curetting considerable detritus was removed; the bleeding, though diminished, still continued. Stypticin, 1.5 grains, was injected into the buttocks and repeated in 8 hours, with marked effect. Subsequently a few doses of ¾ of a grain were given by mouth, when complete cure was effected. In all the remaining cases the result obtained was similar.

8. Irregular Bleeding Due to Retention of Parts of the Placenta.—In these two instances, in which the patients declined to be curetted upon being seen in consultation, the drug was given in ½-grain doses at intervals of 12 hours, 4 doses, without producing any marked difference. Both eventually consented to an abrasio uteri, with prompt relief following.

9. Hemorrhagic Endometritis.—In this category the results from stypticin were not marked in any case until after an abrasio uteri had been made.

Frances J., aged thirty-one years; married 6 years; 2 children, normal deliveries; an abortion at the fourth month. For three months she had had very profuse menstruation, the flow lasting 9 to 11 days; then it ceased for 2 or 3 days, to begin again in the form of spotting for an additional period of 3 to 5 days. The uterus was of normal size and consistency and was (physiologically) anteflexed. No change in the bleeding was produced by the internal administration of stypticin. Then curettage was performed, also without more than temporary effect. Stypticin was then resumed with marked beneficial effect on the second day. At the next menstrual period stypticin was commenced two days before the anticipated flow, with the result of a perfectly normal flow of four day's duration. In six other cases of this class five patients were likewise treated with good results, in one of whom there was a marked improvement. In one case no effect at all was achieved, and subsequent control was lost of the patient.

10. Endometritis Fungosa.—The effect was absolutely negative—subsequent cure by curetting and local treatment.

11. Retroflexion with Endometritis.—These two cases were observed for two months, under stypticin administration, with but slight improvement as to the duration of the flow and quantity of blood lost. The trial was made solely for the purpose of watching the effect of the remedy; and, upon determining that it was without avail, the customary treatment was undertaken, with prompt relief.

12. Chronic Metritis and Endometritis.—Fanny F., aged thirty-five years; married 12 years; 3 children and 4 abortions, the last 2 years ago. For 18 months the menstrual period had been prolonged from 3 and $3\frac{1}{2}$ days to 6 and 7 days, and the amount of blood lost during the first 3 days of the flow was very profuse. Examination revealed an enlargement of the uterus, but its consistency was unaltered; slight tenderness upon pressure during examination; the portio vaginalis was voluminous and the cervix lacerated without ectropion. The adnexa were normal. In this patient (as well as in the other six), stypticin alone was used, to observe its effect on the loss of blood, with the result that a moderate improvement resulted in one instance (the one detailed), the bleeding being reduced to five-days' duration, and the amount of blood lost on the respective days being smaller. In one instance there was marked improvement, and in the remainder the effect was nil.

13. Irregular Bleeding at the Menopause.—Our experience with patients who were in the climacteric age and suffered from irregular losses of blood, was very satisfactory.

Mrs. C., aged forty-seven years, had been losing blood in moderate quantities but at irregular intervals for 5 months, the intervals varying from 10 days to 5 weeks, the flowing lasting from 1 to 2 weeks. The pelvic organs showed no abnormal changes and the interior of the uterus was smooth. The drug was given in doses of $\frac{3}{4}$ of a grain, and the bleeding was completely checked in 3 days. There were 3 recurrences, but each time an almost immediate good result was obtained. In four additional cases the condition present was similar, and the action of the remedy did not differ materially.

14. Irregular Bleeding without Apparent Cause.—The following is an interesting example; and although I have seen similar instances on a few occasions yet they are of infrequent occurrence:

Florence M., aged twenty-nine years, married 3 years, no children, 1 abortion at $2\frac{1}{2}$ -months' gestation. Two years ago, about one year prior to her seeking advice, the menstrual period began to lengthen in duration from 2 to 3 days; gradually this time increased until it reached 2 weeks. She had been curetted and had received local treatment at other hands, with but temporary benefit. Another abrasio uteri, undertaken by the writer, showed nothing abnormal. The patient was then put upon stypticin, which had some beneficial effect on the third day. She was kept on the drug for $3\frac{1}{2}$ months, and became entirely cured. Four menstrual periods have since passed normally. Fluid extract of hydrastis had had no effect.

15. Post-puerperal Bleeding Caused by Subinvolution.—In this the beneficial action was very marked. As an illustrative example the following case is cited: Sarah C., aged twenty-eight years, mother of three children, was delivered eleven weeks previously of a medium-sized male child; all periods of the labor and puerperium were normal. She left the bed on the seventh day and one week later at intervals the still existing sanguineous discharge increased somewhat in quantity for a few days, then gradually ceased, the complete cessation continuing two weeks, when the bloody flow was reestablished and was quite profuse for 5 days, and then became less for 5 or 6 days before cessation. The next interval was of 3-weeks' duration and was followed as before. When the patient was seen she had been bleeding 4 days. Within 24 hours, upon the administration of $\frac{3}{4}$ of a grain of stypticin every 2 hours, the amount of blood began to be diminished, and the flow ceased entirely in $2\frac{1}{2}$ days. In only one instance of the eleven in which the remedy was used was the result unappreciable; with this exception the therapeutic value for such indication was all that could be desired or expected.

16. Meno- and Metrorrhagia Resulting from Traumatic Peri- and Parametritis.—We had opportunity to observe three such cases due, in one instance, to dilatation of the cervix, and in two other instances to intra-uterine applications. In these cases successful treatment was effected with stypticin; in all three the flow of blood began to diminish twenty-four to thirty-six hours after the commencement of the drug, and was arrested completely within three and four days.

17. Slight and Irregular Losses of Blood During Pregnancy.—In three patients these losses were stopped with stypticin.

My house surgeon, Dr. Buddeke, used one hypodermic injection of stypticin after a delivery of placenta previa, with immediate effect on the bleeding. This would make it appear that the drug does possess some oxytocic properties; but two instances of slight bleeding at the third and at the fourth month of gestation, noted by the same observer, in which the bleeding ceased after stypticin, without abortion being produced or without even producing the slightest pain, would again throw doubt on its effect in this direction.

Conclusions.—In reviewing the action of the drug one must come to the conclusion that in certain forms of uterine hemorrhage it is almost a specific. I have found no unpleasant symptoms produced even if it was given in doses larger than usual, as has been observed in cases in which $4\frac{1}{2}$ -grain doses were administered. It cannot be corroborated by

me that the remedy produces a hypnotic effect, such as has been observed by Gottschalk, who attributes such effect to its being a derivative of opium.

The belief prevails, according to the experience in Gottschalk's clinic, that stypticin possesses oxytocic properties, which is held to account for the usually prompt action. This, however, has been carefully looked into by Gaertig, in the Prov. Hebammen-Lehr-Anstalt, in Breslau, under the direction of Dr. Baum. Eleven subjects were utilized to determine its effect in this direction. It was used in cases of weakened uterine contraction and for the induction of premature labor, but the result was negative. In the cases of premature labor, not a single uterine contraction was produced; in the cases of atony only in two instances mild, slightly painful contraction was observed; and the observer quite correctly remarks that it is extremely doubtful if they could be ascribed to the action of the stypticin.

For some time more attention has been devoted to operative interference for the control of bleeding from the uterus, or to some form of local treatment, the latter not infrequently with deleterious result to the patient. This was undoubtedly due to the unsatisfactory results which had been obtained from the internal remedies used in the respective cases. These remedies were few in number. With the introduction of stypticin, however, we have a very valuable new remedy, a hemostatic *par excellence* if the proper indication has been selected for the employment of the drug. In the above I have endeavored to show in which classes of cases such results may be expected. If a quick result is to be achieved, an injection into the glutei of 20 minims of a ten-per-cent solution in sterile water, with the customary antiseptic precautions, may be given without hesitation, and repeated in eight to twelve hours. Only a few days ago I saw a most marvelous result from this procedure. A woman who had been bleeding for three weeks, *post-abortum*, and who was exsanguinated from the loss of blood, was seen by me with the expectation that I should curette her. I requested her physician to use the remedy as described above, because from the examination of the pelvic organs I could not find an absolute indication for the use of the curette. After the first injection the bleeding ceased and did not recur.

I should, perhaps, make a differentiation as to the cases in which hydrastinin, hydrastin, ergot, and ergotin, and those in which stypticin can be used with best effect; but this is too great a scope for this paper, and I close this recital of my personal observations by requesting those who have tried

other remedies and found them wanting, to add also stypticin to their therapeutic agents, feeling convinced that in it they will find a most useful addition, and that the curette and local treatment will be less frequently called for.

Therapeutic Review.—For the sake of greater completeness, let us now also briefly review the results of the stypticin treatment by other observers. Joseph v. Braitenberg¹ reports twenty-four cases from Ehrendoerfer's clinic at Innsbruck. A sedative action could not be substantiated, neither were disagreeable accompanying symptoms present in any instance. Doubtful or negative results were obtained in uncomplicated hemorrhagic endometritis, if no abrasio uteri had been previously performed; if, however, the bleeding recurred after curetting, the action of the drug was prompt. In hemorrhage due to displacements of the uterus, perimetritis, parametritis, or inflammatory changes of the adnexa, the results were, so far as the arrest of the bleeding was concerned, usually good. Profuse and protracted menses were shortened in duration. In hemorrhage without discernible anatomical changes the results were favorable. In hemorrhage due to fibromyomata (one case) no benefit was obtained. One case of retroflexio uteri gravidi, in which there was persistent moderate bleeding after correction of the displacement, so that an impending abortion was thought of, the bleeding ceased after the administration of seven tablets, each containing $\frac{3}{4}$ of a grain; no uterine contractions were produced and abortion did not occur.

Backofen² had forty cases under observation in the gynecologic clinic of Czempin at Berlin. In his experiments he excluded cases of hemorrhage due to subinvolution after the puerperium and after abortion; in such ergot was given. In virginal menstrual hemorrhage, stypticin was used five times; three times with success, and twice the result was negative; in the latter instance, hydrastis, hydrastinin, ergot, and curetting were also without avail. In menorrhagia in consequence of parametritis, or inflamed adnexa, or displacements with inflammatory processes, the results were excellent. In nine cases there was an invariably prompt action, and there could be no doubt as to its being due to stypticin. In consecutive metrorrhagia accompanying the above conditions, it also had a similar beneficial effect. In twelve cases the action was prompt eight times; once a fair result was achieved, and three times the result was negative. Consecutive hemorrhage from pedicle exudates following salpingo-oophorectomy, four cases. In two the result

¹v. Braitenberg, *Wiener Med. Presse*, No. 35, 1898.

²Backofen, *Munch. Med. Woch.*, April 5, 1898.

was good, and in the other two it was negative; in the latter other remedies also failed. In two cases of acute gonorrhoeic infection with severe atypical hemorrhage the result was excellent. In 8 cases of subacute increase of chronic corporal endometritis (endometritis hemorrhagica) in 5 good, in 1 doubtful, and in 2 negative results were obtained. Hemorrhage at the menopause, two cases. In one the result was good, and in the other decided improvement took place with a similar good result upon recurrence of the bleeding. In one case of bleeding during pregnancy between the fourth and fifth month of gestation the result was good, and no uterine contractions were produced. In one case of myoma there was a negative result. Secondary effects were noted in two patients, in whom severe headache occurred after taking the drug; two patients had nausea and diarrhea. A sedative action, which was observed by Gottschalk and Nassauer, could not be substantiated.

H. Gaertig¹ reports on forty-six cases: Ordinary menorrhagia, 7; endometritis with hemorrhage, 11; complicated and simple retroflexion with hemorrhages, 11; subinvolution after delivery or abortion, 7; hemorrhage during the menopause, 3; hemorrhage in consequence of inflamed adnexa with retroflexion, 1 case; hemorrhage in consequence of inflamed adnexa without retroflexion, 2 cases; hemorrhage due to fibromyomata, 4; hemorrhage due to impending abortion, 1 case.

The most favorable results were obtained in the instances of uncomplicated menorrhagia, namely, six positive results out of seven cases; equally good results were obtained in the bleeding during the climacterium. The least benefit was obtained in the hemorrhage from endometritis, especially if other complications existed. In hemorrhage due to retroflexion the result was good, negative, however, if an endometritis complicated the displacement. At no time were unpleasant symptoms observed, even with large doses and long continued use.

Max Nassauer² reports 49 cases as follows: Three climacteric hemorrhages, all immediate good results; hemorrhage due to subinvolution after abortion, 12 cases; in 11 excellent result, and in 1 improvement; post-puerperal subinvolution of the uterus causing hemorrhage, 2 cases; 1 excellent result, and the other a good result; myoma-uteri, 6 cases; 1 excellent result, 2 good; 2 improved, and 1 negative; menstrual hemorrhage in virgins without pathologic lesions, 2 cases, in both excellent results; imminent abortion, 1 case; result excellent; the hemorrhage ceased entirely two days after commencement of stypticin ad-

ministration; in hemorrhage from adenocarcinoma of the uterus, 1 case, with benefit; reflex uterine (secondary) hemorrhage, 10 cases; in 3 excellent results were obtained, and in the other 7 good results; hemorrhage due to endometritis, 11 cases; 1 very good; 2 good; 2 improved; 1 doubtful, and in the remaining cases the result was negative. The menorrhagia in the instance of 1 scrofulous hysterical person was not bettered. Nassauer finds that stypticin has a decided sedative influence, which makes it a valuable remedy in meno- and metrorrhagia and dysmenorrhea. Unpleasant symptoms were not produced, except in patients with idiosyncrasy to opium, when it caused nausea and headache.

Sigmund Gottschalk, in 1895, reported 47 cases: Climacteric hemorrhage, 5 cases; in only 1 case the result was negative, and in this instance Gottschalk had the suspicion that a mucous polypus was present; the other 4 cases gave very good results. Secondary uterine hemorrhage, 6 cases; 5 with good result; in 1 with tubo-ovarian swelling the action of the stypticin was negative; hydrastis had the desired effect. Menstrual hemorrhage in virgins without anatomical lesion, 4 cases; 2 with good results, 1 improvement, and 1 negative. One purpuric hemorrhagica, improvement. Fungous endometritis causing uterine hemorrhage, 7 cases; in 5 cases, improvement; in the other 2, negative; then curetting was done, but the hemorrhage continued, when stypticin was again used, this time with good results. Hemorrhage due to fibromyomata, 4 cases; in all a decided improvement. Hemorrhage from endometrial polypi, 3 cases; 1 improved, the other two negative; they were cured after removal of polypus. Impending abortion hemorrhage, 6 cases; in 5 abortion resulted, and in the sixth the bleeding was arrested without abortion being produced. Hemorrhage due to influenza, 2 cases; in 1 immediate cure, and in the other improvement. Puerperal subinvolution, 5 cases, all with excellent result. Hemorrhage due to subinvolution from a blood coagulum at the site of the placenta, improvement, then a slight recurrence, when an intra-uterine douche was used and the coagulum was evacuated. After this the hemorrhage ceased. Hemorrhage with superinvolution of the puerperal uterus without lactation, one case, with excellent result. Menorrhagia after curetting, 1 case, with immediate good result.³

¹ Since the above writing, my colleague, Dr. A. P. Dudley, reports a case of profuse metrorrhagia due to uterine fibroid controlled promptly by stypticin given subcutaneously as described above. I have also observed the arrest of flooding in a case of interstitial fibromyoma from the administration of the drug in $\frac{1}{2}$ -grain doses every two hours; also the arrest of dysmenorrhea associated with intense headache during profuse and prolonged menstruation in another case.

² H. Gaertig, *Therap. Monat.*, p. 419, February, 1896.
³ Max Nassauer, *Ibid.*, Nos. 32 and 33, 1897.

**THE PRESENT STATUS OF PHARMACY AND
ITS POSSIBLE IMPROVEMENT.¹**

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PHARMACY has been called the handmaiden of Medicine. Its normal relation is certainly one of helpfulness and dependence. But we as physicians must remember that the helpfulness is born of a need of that help which many fail to appreciate, and also that the dependence of pharmacy implies an ability on our part to direct, to educate and to fix standards for our dependent. Furthermore, the question of ideals has more than a passing influence upon the character of pharmacy. Particularly at the present time, when it is a question whether pharmacy in the future shall be a trade with business ideals or a profession with humanitarian ideals, should this thought engage our minds. Pharmacy naturally looks to medicine for her ideals. Is she disappointed?

But let us not separate the two too widely. Pharmacy must be regarded as a part, a special branch, of medical science; and this relation is emphasized by the present tendency in medical schools, where a course in practical pharmacy is coming to be regarded as essential to the medical education.

The ability also that pharmacy has shown in meeting our needs in the way of more precise medication and pleasanter preparations, in the isolation of active principles of drugs, and in processes of assay which guarantee a certain quality of preparation should be appreciated. But in order that our respect for our helpers may not rest solely upon these achievements it is asserted that the best thought in pharmacy to-day is fully abreast of progress in all practical lines. If any are inclined to doubt the assertion, convincing support of the same may be found in the history of the United States Pharmacopoeia during the past sixty years. In the successive revisions of this admirable book pharmacal aid has been on the increase since 1840, when it was invited to the work of revising this our standard of *materia medica*. In the edition of 1840 the value of pharmacal assistance was evidenced by the introduction of the process of percolation as a means of exhausting drugs. Since that time representative pharmacists have regularly participated in the work, and their interest in the book even led to their delegates outnumbering those from medical bodies at the last Pharmacopeial convention in 1890.

Corresponding with this enlarged pharmacal influence we note very great improvements in the

book, among which is that of the adoption of the metric system in its formulæ.

I admit that this is taking pharmacy at its best and that some minds will at once draw a comparison with the average drug-store, which may be very disparaging to the latter; but I maintain that, in spite of the commercial atmosphere of the ordinary store, pharmacy is making a steady improvement, largely unaided by us, and that its best men are anxious to keep pace with the rapid progress of medicine in the sphere of their relation to it.

Now what are some of the evidences of improvement? *First*, in the line of literature. We find that while during the fifty years from 1829 to 1879 there were established in the United States *four* pharmacal journals, or an average of one in twelve and one-half years, during the sixteen years from 1880 to 1895 inclusive there were established *twenty*, or an average of one every ten months. *Second*, in the line of restrictive legislation. Previous to 1880 the practice of pharmacy in this country was practically unrestricted except in five States and three cities. Since 1880 there have been enacted thirty-nine State laws which originated in pharmacal bodies. These laws in the main require four-years' experience and an examination in order to license. *Third*, still greater evidence of progress is seen in the increase of Colleges of Pharmacy from *three* in 1840 to *fifty* in 1895, and this without the existence of any legal necessity of a college training on the part of pharmacists. This advance cannot be born of any commercial spirit but must be expressive of an ambition to prepare well to meet the recognized need of trained men. And the writer is convinced that the college training of pharmacists should be as broad as is possible within reasonable limits. The maxim, "A little knowledge is a dangerous thing" is probably nowhere better or more generally exemplified than in our drug-stores. The average dispenser without college training possesses some knowledge of medicine above that needed in his work and he frequently uses that knowledge improperly. But the college man, if properly trained, though possessing a larger knowledge of facts pertaining to medicine, has learned when *not* to use them. In other words our college-trained men are not as a rule engaged in illuminating the fences, in counter-prescribing, and in substituting. The commercial spirit so prominent in the pharmacy of to day, with deficient training, must be held largely responsible for such abuses, while the progress in education, as shown in the increase of colleges, gives hope of a better state of affairs in the future.

Let us now consider another feature of our subject—one of some importance—the individual phar-

¹ Read before the Buffalo Academy of Medicine, February 24, 1899.

macist. We have drawn outlines of the picture of what he may be and we are very sure we know what he ought to be, but he is not it. Our average pharmacist of to-day is a commercial man and not the professional man we should want him to be. Why is this? The reason is not far away if we follow the path of the drug-clerk. And truly his path is not an inviting one. From the beginning of his apprenticeship as bottle-washer and errand-boy he sees the motto of the store plainly visible everywhere and that motto is—*business*. He sees how things are done behind the counter. His employer is not a professional man, may even ridicule the college graduate. In his school of experience he has learned to place highest value upon the business qualities in a clerk, and, therefore, the professional aspirations of the college man are all moonshine to him. Do not blame him too severely for he was trained in a business environment.

But it is evident that the whole atmosphere of the store is such as to favor a perpetuation of his kind unless our clerk has professional instincts and is able to rise above the level of his surroundings. Even then his advisers are likely to take the business view and remind him that he need not go to college, he can study up and pass the State or county board and get his license, and what more does he want? Now just reflect upon the situation of our clerk and imagine what will be the bent of his mind by the time he comes to be manager of a store. Add the business necessities that attach to the modern pharmacy and the question why our average pharmacist is a commercial man is largely answered.

Most colleges have abolished the requirements of a number of years of drug-store experience as a prerequisite for graduation. This must be regarded as an advance for we will probably agree that, after a certain amount of experience, the earlier the college training is had the higher will be the ideals and more ethical will be the practice of the pharmacist. A long experience of the ordinary drug-store kind, taken alone, is certainly inimical to a professional development.

But there are still other influences which help to make the pharmacist what he is. The rush of trade—soda-water, cigars, candies, and the like, the appeals to turn his windows to account through well-paying advertisements, living or otherwise, the resurrection of celebrities of the past to preside over the cigar department, etc. In such a whirl of interests how can he be expected to give scientific pharmacy his first attention. He knows that inferior fruit syrups will be criticised more than inferior drugs. He knows that the cigar customer will not wait while the prescription is being compounded, so

the latter has to. In short, the average pharmacist has to subordinate the scientific to the commercial. He is not wholly to blame. The conditions and usages which he has to face require it to a great degree. But we are led to say that, from our viewpoint, while the training of the pharmacist may be said to be simply deficient in character, the prominent features of the average drug-store are an abomination.

Our pharmacist further has to undergo a certain discipline. He has not only to consult the needs of the doctor but to humor his whims. He has to bear his criticisms, not always consistent or seasoned with charity, but does not usually trust to his own tact to retaliate profitably. He is affected more than he sees fit to complain of by the changing fashions and fads in medical practice. The doctor often does the experimenting at his expense. When he is asked to stock up with a high-priced new article he cannot refuse; but when at the end of the year he finds the stock lessened by the filling of *one* prescription he murmurs not, but the balance in that transaction is on the wrong side of the page. His thoughts we will not reveal. But I do think that the educated and ethical pharmacist might be expected to regard with some contempt the physician who passes by the potent official preparations on his shelf because of ignorance of their action or inability to properly prescribe them, but calls for one after another semiproprietary mixture whose chief recommendation is its extensive advertisement. What a short step to the sale of fully patented preparations.

These thoughts come so naturally in a discussion of this topic that I will presume upon your indulgence a little farther. Legitimate pharmacy now for a number of years has had to endure serious competition from the tablet manufacturer and his ubiquitous agent. It is not proposed to discuss the comparative value of drugs in the form of their liquid extracts or in the pleasanter tablet forms; but it is evident that with certain drugs the use of tablets is to continue, and must be accepted as a normal departure. But the use of tablets, as well as of other ready-made combinations, encourages an unwholesome tendency to depend upon others for our formulæ.

And were I a pharmacist my bitterest reflection would be upon the decline of independent combining and prescribing on the part of physicians. Prescribing is destined to become a lost art unless our medical schools take warning and educate better along these lines. There are many who allow the wholesale manufacturer to do their combining, their prescribing, and I would almost say their thinking for them. The wonder is that physi-

cians will tolerate the effrontery of some manufacturers in their efforts to dictate the use of their proprietary products. But so long as they do we will find one branch of pharmacy developed to perfection, namely, the large commercial manufactory where capital employs both medical and pharmacal talent at a good figure to prepare formulæ for physicians' use, while the would-be professional and deserving retail pharmacist struggles with the question of selling patent medicines to make ends meet.

This last allusion bears upon the question of income, which will not be discussed except in relation to the drug-clerk's prospects. The decision against taking a college course is very often compelled by the meagerness of the ordinary clerk's salary. Indeed, small is the financial inducement to take a course of training which is optional, when after time and money is expended the probable income for years will not exceed \$12 or \$15 per week. It is said that all pharmacists save money. But that is due less to any large income or virtue on their part than to the providential conditions which compel them to stick so closely to business that they have not time to spend it.

Now as to improvement in pharmacy. Every thinking physician owes it to medical science as a whole to give serious thought to this subject. We cannot get along without pharmacy much as we may condemn the practice of the commercial pharmacist. You have doubtless seen in the foregoing remarks indications of a conviction that the medical profession is to some degree responsible for the present state of pharmacy. The writer is further convinced that no great improvement can occur without our thoughtful aid, and that the future usefulness of pharmacy requires a constant and considerate cooperation of physician and pharmacist.

Our thought must extend in five directions: To the college, to legislation, to the pharmacist, to the store, and to ourselves. In the first two our aid must be less direct, but a brief allusion will indicate what should be our attitude. The colleges of pharmacy are probably as good as they are likely to be under present conditions. They have to provide an optional course of training for students who attend voluntarily, many of whom are obliged, for financial reasons, to work in a drug-store while attending. And let me state that there are many more ambitious young men who would gladly take a college course if there were sufficient opportunities for them to aid themselves in such way, but who are obliged to content themselves with a license granted by a board of pharmacy, and they aid to swell the ranks of the less ethical because less educated pharmacists.

Pharmacy has reached that stage of educational progress when a college training should be required by law. Medicine passed that stage many years ago, and should now encourage and aid pharmacy to secure the benefits of such legislation. The results of such a law would be fewer pharmacists and better, better colleges, the development of the professional and lessening of the commercial spirit; and this is what physicians should always foster. I believe no step could result in as great improvement in a short time as the enactment of laws making a college training obligatory upon the student of pharmacy.

The objection will be here raised that the colleges will teach too much of the uses of medicines and make counter prescribers of their graduates. I do not fear this for one moment. And I repeat, for the sake of emphasis, what appears earlier in the paper, that the little knowledge of medicine possessed by the commercial pharmacist is a dangerous thing, but that the greater knowledge possessed by the professional man is a safeguard against the improper use of his knowledge. This must be just as true here as in medicine, where the better training in a special line leads to a practise restricted to that line. The college training should, therefore, be as broad as is possible within proper limits. One thing, in addition to the essentials, seems especially important. That is the study of hygiene. A knowledge of the infections and of proper sanitation would render him a valuable coadjutor to the physician in his community, where an intelligent public sentiment is so often wanting.

Our thoughts for the improvement of the pharmacist are partly involved in our previous considerations. Further than that, he should be regarded as the ally and equal of the physician, and as possessing in some directions knowledge and skill superior to the physician. Throughout this paper free use is made of the terms "commercial" and "professional" as applied to pharmacy and pharmacist. Are they not good terms to employ? They will tend to preserve in our minds the distinction between what pharmacy largely is to-day and what it should be. They will aid in discriminating between what should be aided and what should be discouraged. And we must remember that there are professional pharmacists. There is great need of more.

The same distinction will apply to stores. And we must remember that there are also professional pharmacies. In some cities there are strictly legitimate prescription pharmacies, and there might be in every city or town with the aid of the medical profession. With a knowledge of present conditions it is entirely proper, if not indeed a duty, for

physicians to discriminate between stores for the compounding and dispensing of their prescriptions. Whatever the future has in store for pharmacy, a thoughtful regard and cooperation on the part of physicians would probably lead to two kinds of stores: the professional, where chief attention would be given to compounding prescriptions, and commercial stores, where soda water, cigars, and proprietaries might be sold, scissors sharpened, bicycles mended, or anything you please.

In introducing our final direction of thought—toward ourselves—permit me to repeat that pharmacy naturally looks to medicine for her ideals. Is she disappointed? Our influence upon pharmacy, by our personal attitude toward the pharmacist, is inevitable. Our own ethical standard tends to determine his. Due courtesy toward him, therefore, will command a more careful attention to our needs, not upon the ground of policy, but because his standard of action is raised. On the other hand, an inconsiderate behavior on our part will tend to make his assistance in our practice only perfunctory, and will degrade the standard of his service. Our conception of professional ethics should be such as to lead us to treat with the utmost fairness and courtesy any one who is engaged in applying to any branch of medical science a skill supposedly equal to our own in any direction.

We should likewise exhibit a high standard in the line of education. Our attainments in those branches which are most intimately related to his practice should approach his. I feel that a plea should be made for greater efficiency in prescribing and for a more thorough acquaintance with the resources of our United States Pharmacopeia. For, beside the great benefit thereby to ourselves, we should better appreciate the work of the pharmacist, and he would not behold so monstrous and degrading a spectacle as that now presented of physicians gulled and deluded into aiding by use and by testimonial the proprietary manufacturer in the sale of his high-priced but inferior products.

SOME OBSERVATIONS UPON ERYSIPelas AND ITS TREATMENT.

BASED UPON A NEW SERIES OF 100 CASES.¹

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THE clinical study of erysipelas has interested me for a number of years, and I have upon two previous occasions presented the results of clinical expe-

rience. In July, 1891, I published in the *American Journal of the Medical Sciences* a personal experience in fifty cases, in which paper I also reviewed and analyzed 419 cases in the City Hospital during the preceding two and one-half years. As a result of my observations at that time, I concluded that the treatment of erysipelas would be best carried out by conforming to bacteriologic findings, and that since the streptococcus had been found to grow more rapidly and luxuriantly under conditions of abundant oxygen supply, it seemed rational to attempt to shut off this supply in treating the disease. To do this, I employed collodion medicated in various ways. Of the numerous remedies tried none was found to work so well as ichthylol. Permit me to state here that so far as the remedy to employ is concerned, my paper might terminate with the statement that during the past eight years nothing has been found to take its place. There are, however, some things to be said about the manner of using the remedy, and also about a combination method for suitable cases.

Up to the time of reading my first paper at a meeting of the American Dermatological Association, in September, 1890, I had employed the method of mechanical pressure by means of an adhesive band as recommended by Wölfler in but a single instance. Its action was so manifestly efficacious that before the paper was printed I had tried it in three others, with good results in two. In a paper on "Erysipelas in Its Etiological Relation to Preceding Skin Lesion and Its Local Treatment," published in the *Medical Record* for November 23, 1895, I reported the results in fifty additional cases.

Before reverting to therapy, I would call attention to the fact that in these two series of cases a cutaneous defect of some kind was found to serve as a *porte d'entrée* for the infecting micro-organisms in no less than fifty per cent. Of the other half the throat was accused in 9 instances, nasal catarrh in 3, and lacrimal fistula in 2.

In treating and observing this last group of 100 cases, most of which have been seen since the spring of 1897, I have been struck with the frequency of coexisting or preceding nasal affections in the facial cases. In former times these were almost always put down as "idiopathic" in contradistinction to the traumatic forms or those in which some solution of continuity of tissue could be discovered. It has become my conviction that in the absence of cutaneous lesion or throat affection to account for it, the nose is the part through which ingress is effected by the cocci. In every instance of facial erysipelas observed (and the great majority have been of this variety) I have inspected the nares and

¹ Read before the Lenox Medical Society of New York, December, 1898.

made enquiry regarding nasal disease. The result has been that at least two-thirds of the patients gave evidence or history of disease.

Believing as firmly as I do in the efficacy of ichthyl, I have naturally turned to this remedy as well in combatting the process at its seat of origin, and have applied in all cases a fifty-per-cent. watery solution of ichthyl, so as to bathe the whole anterior and posterior nares as far as possible, covering over all fissures and excoriations at or near the introitus. Upon the skin surface I employed a twenty-five-per-cent. solution in collodion. The results have been surprisingly good, and I have repeatedly been able to demonstrate to my assistants and to students a complete cessation of the process, so far as symptoms, temperature, and objective signs go, within twenty-four hours of the first visit. Many other patients were discharged cured upon the second or third day. Almost all the cases were seen early, *i. e.*, in from twelve to twenty hours of the chill or earliest evidence of local inflammation.

Aside from an occasional prescription of ichthyl in pill form to correct some gastro-intestinal disturbance or something to relieve headache, no internal medication whatever has been made use of during the attack. During several years I have not given a single dose of tincture of iron in erysipelas. The adhesive band has been applied in a number of instances, usually in erysipelas of an extremity, in combination with the ichthyl paint, and always with the most gratifying results.

There have been no deaths to record in this last 100 cases so far as I have been able to follow them, or to learn from the district visiting-physician who might have seen some of the patients subsequently, although extremes of age are represented. In view of the fact that many subjects gave a history of one or more previous attacks, and the well-known tendency of facial erysipelas to recurrence, I would strongly recommend attention to the nose and throat as a prophylactic measure, and I have no doubt ichthyl will be found a useful drug in ozenas and chronic conditions requiring antiseptic and deoxidizing or reducing agents. The advantage of rubber adhesive-plaster bands over the application of several layers of contractile collodion is that the latter is apt to break at some point, and it is through this open door that the erysipelatous process is seen to advance into new territory just as water rushes through a break in a dam and overflows the plain.

I have recently treated a number of children for erysipelas of the extremities, and have had the most prompt results from what I call my "combined method." I now have about fifty cases in which

the adhesive constriction has been combined with collodion painting. I feel confident that if this plan be resorted to early and be properly carried out no necessity will arise for scarification to produce a barrier, nor for resort being had to antistreptococcic serum, which, so far as I can learn, is of doubtful efficacy in severe cases in infancy and childhood.

CLINICAL MEMORANDUM.

AN OBSTINATE CASE OF PURPURA HEMORRHAGICA.

By J. H. BURCH, M.D.,
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THE patient, Susie C., aged fourteen, a blonde, of Irish parentage, weighed at the commencement of her illness 125 pounds. Her mother and father had always been healthy, but the latter's brother had died from the effects of excessive loss of blood from a very slight scalp wound, the hemorrhage, it was said, having been uncontrollable.

The patient had been apparently strong and well-nourished up to the age of seven years, when she was suddenly attacked by epistaxis, the hemorrhage, I am told, being excessive and demanding repeated post-nasal plugging for several days. The physician in charge, Dr. Barton of Clyde, N. Y., informs me that the attack began with a pronounced chill, and that at the end of the third day purpuric spots appeared on the child's leg and abdomen. She recovered from this attack and remained in good health until September 7, 1886, when, without premonitory symptoms another attack was ushered in by a severe chill, followed by high fever, her temperature at 9 A.M. being 105° F. and her pulse 150, very weak and feeble.

On September 8th her temperature was 100° F. and her pulse 120. The following day her temperature was normal and she felt fairly well and seemed to be in a fair way toward a rapid recovery, but on September 11th she again had a very severe chill which was followed by high fever, her temperature reaching 105° F. This was followed by sweating and a reduction of temperature. During the sweating stage an oozing of blood from the mucous membrane of the gums and mouth occurred, which was controlled with considerable difficulty by strong astringent mouth-washes. The next morning, September 12th, she was unable to retain nourishment, the ejected from the stomach being mixed with blood. Nausea and vomiting then became a constant symptom, each ejection containing blood. During the evening of the same day hematuria developed, the urine being scanty, smoky, and containing one-half of one per cent. of albumin and granular and epithelial casts and blood. The next day her condition remained about the same, her maximum temperature being 103° F. and pulse 160, the latter very weak but steady.

On the 13th her condition was much better; the vomiting had ceased but the urine was still bloody and contained albumin and epithelial and granular casts. Her maximum temperature was 100° F. and pulse 100 and

stronger. During the night she was bathed in a cold, clammy perspiration, and a marked jaundice manifested itself. The sclerotics were yellow, as were also the face and neck. I also noticed for the first time purpuric spots on the left arm and ankle.

On September 14th her general condition was better, the icterus and hematuria being less pronounced, but the purpuric spots were beginning to appear on her abdomen. At three o'clock in the afternoon I was called in great haste and found her nearly exsanguinated, there being a profuse hemorrhage from the left nostril. The nostril was immediately plugged with iodoform gauze, which controlled the bleeding. The next day she was much better. The hematuria was disappearing, albumin was present to the amount of $\frac{1}{4}$ of 1 per cent., but there were no more casts. On September 16th I removed the tampon from the nostril but as this was followed by excessive hemorrhage another was introduced. On September 18th I again removed the tampon from the nostril but the hemorrhage was again excessive, demanding re-plugging. On September 19th the purpuric eruption disappeared and her general condition was much better, her temperature being normal and her pulse 90 and stronger. On the following day I again removed the tampon from the nostril, but the hemorrhage was so profuse that I at once replugged it, using strips of sterilized gauze saturated with a 20-per-cent. solution of antipyrin. On September 22d I once more removed the tampon and no hemorrhage followed. She made a good recovery and remained apparently well until February 5, 1898, when, without premonitory symptoms she had a severe chill which was followed by well pronounced fever and sweating.

On February 6th she felt fairly well, but on the following morning she was again stricken with a severe chill, followed by a profuse hemorrhage from the left nostril. I was hastily called and found her in a state of collapse. Her pulse was scarcely perceptible and was weak and thready. The extremities were cold and bathed in a clammy perspiration. I immediately plugged the nostril, both anteriorly and posteriorly, with gauze, but the blood continued to ooze drop by drop. I then removed the tampons and replaced them very carefully with tampons of absorbent cotton, saturated with 1 to 1000 bichlorid-of-mercury solution. The plugs were carried far back into the posterior nares and the whole nostril was very firmly packed. This controlled the hemorrhage, and it was indeed time, as the patient was rapidly sinking. By the aid of heat and stimulants, hypodermically administered, she gradually revived and when I left her temperature was 99° F. and her pulse 160, very weak and compressible.

During the profuse hemorrhage I collected about ten cubic centimeters of blood as it flowed from the nostrils, and fully verified the observations of Hayem, which were afterward confirmed in sixteen cases reported by Beusaude¹ of Montpelier, in regard to the non-retractility of the clot and the formation of serum. The blood in this case, as in the greater number of the graver cases reported by Beusaude, showed no tendency whatever to clot but remained entirely fluid.

At 3.30 in the afternoon I was again hastily called and found the patient bleeding profusely from the right nostril, which I was also obliged to plug in order to control the hemorrhage. On February 8th, she had a pronounced chill, her feet, legs, and hands being icy cold. The chill continued twenty minutes, her temperature then rising to 105° F. During the night she slept somewhat and was bathed in perspiration. She vomited a little blood, which was thick and of a dark color. The area of hepatic dulness had not increased, nor had that of the spleen. The urine was of a dark color, the specific gravity being 1028. The reaction was distinctly acid. Carefully centrifugalized sediment revealed only a few crystals of uric acid and squamous epithelium. I pierced a lobe of the ear to obtain a drop of blood for examination, and a small stream issued forth from the puncture, which was so difficult to control that I was obliged to apply a compress of styptic cotton for more than half an hour. A microscopic examination of several specimens of fresh blood for the plasmodium malariae revealed nothing suspicious. A blood-count (Toma-Zeiss) showed the number of red blood-corpuscles to be 3,800,000 per cubic millimeter, and the leucocytes, 10,000 per cubic millimeter, the increase being manifested mostly in regard to the polymorphonuclear cells; hemoglobin was thirty-five per cent. A dried specimen, stained after the method of Ehrlich, revealed simple anemia, both red and white cells being fairly normal in appearance. During the afternoon of that day her temperature was 104° F., and her pulse about 180, but so weak and rapid that it was very difficult to count it accurately. The heart sounds were distinct. The bowels moved five times during the day, the ejections being of a thin, brownish character. There was some ileocecal gurgling. Nothing could be retained in the stomach except Valentine's beef-juice, only a few drops of which could be given at a time. The drugs employed at this time were strichnin sulphate, $\frac{1}{10}$ of a grain every four hours, and 10 minims of aromatic sulphuric acid every three hours.

On February 9th her temperature was 101° F., and the pulse 150, the latter weak but regular. The coating of the tongue was dry and brownish. The bowels had moved but twice during the night, and she had vomited but twice. Some sleep had been obtained, and her general appearance was improved. The area of splenic dulness was increased, and the urine was clear and dark-brown in color, and contained a trace of albumin and epithelium. The blood-count showed the red cells to be 3,500,000 per cubic millimeter; white cells 12,000 per cubic millimeter; hemoglobin 35 per cent. The stained specimens began to show slight poikilocytosis and the Maragliano reaction. The nuclei of the white cells showed evidence of fragmentation. The Widal Johnson reaction was negative. The bowels moved twice that day, and she vomited but once, and retained beef-juice in larger quantities. The tampons were removed from the nostrils, which resulted in excessive hemorrhage, demanding immediate replugging.

On the morning of the 10th her temperature was 101° F. and pulse 120. She had slept fairly well. The menses

¹ *Semaine Medicale*, June 20, 1897.

appeared that morning but were not at all profuse. The urine was of a dark-brown color, the specific gravity being 1028. It contained one-half of one per cent. of albumin, and a small amount of epithelium. The blood-count was: red cells, 3,400,000 per cubic millimeter, and white cells, 12,000 per cubic millimeter. Stained specimens showed distinct poikilocytosis; there were also distinct degenerated changes within the nuclei of the polymorphonuclear cells. At 5 o'clock in the afternoon her temperature was 103.5° F., and pulse 160, the latter being weak and compressible. The bowels had moved twice, the ejections consisting of thin, brownish liquid, and there was ileocecal gurgling. The Widal-Johnson test was negative. She had vomited three times, and her general appearance was bad.

On February 11th her temperature was 101° F. and pulse 120, very weak but regular. The heart-sounds were normal. The spleen was distinctly palpable. There were no bowel movements during the night and she appeared better. The urine was dark and smoky, the specific gravity being 1025. There was a strongly acid reaction. The urine contained one-half of one per cent. of albumin; the chlorids were normal, but there was an increase in the phosphates. The Ehrlich diazo-reaction was marked, the foam being distinctly red. Centrifugalized sediment showed an increased number of blood-cells, granular and epithelial casts, and very peculiar bacilli about as long as a colon bacillus, but thicker and non-motile. The blood-count showed the red cells to be 3,300,000 and the white cells 13,000 per cubic millimeter, the increase being both in regard to the small mononuclear and the polymorphonuclear variety of leucocytes. There was a marked poikilocytosis, the red cells being deformed and with distinct polychromatophilic changes. The appearance of the white cell was very peculiar and the polymorphonuclear cells appeared distorted in shape. The cell-wall was broken in places and the protoplasm was apparently filled with granules which seemed to be exuding from the broken cell-wall. The nuclei were fragmented, taking the stain badly, and in close proximity to the cells were clusters of fine granular bodies which were very indistinct. Within the red cells were bodies not having the appearance of nucleated cells or of the plasmodium malariae. Several cover-glass preparations were then stained after the method of Romanovski.¹ This brought out these bodies more distinctly, and also revealed groups of bacilli similar in appearance to those found in the urine. The bodies were about one-quarter the size of a red blood-cell, and were stained a deep blue and were round in shape. The staining qualities differed from the hematozoon of malaria from the fact that each body was deeply and regularly stained, and also from the fact that they were outside the red cells in exactly the same regular form, being found in groups of from two to three in the immediate proximity of a polymorphonuclear leucocyte. These bodies were similar, I should judge, to those described by Dr. Deney² in the case of a woman

who had suffered from obscure gastric symptoms and in whom a few days before her death, hemorrhagic spots appeared on the mucous membrane of her fauces, vagina, and on the skin. A careful examination of several fresh specimens of blood failed to reveal the plasmodium malariae or the motile granules described by Müller. The blood was carefully examined for blood plaques, with negative results, none being found during the entire course of her illness. During the afternoon of that day the patient had a very slight chill. I again removed the tampon but the profuse hemorrhage demanded immediate plugging of both nostrils.

On February 12th her temperature was 105.5° F. and pulse 120, weak and compressible. The bowels had moved once during the night, the ejection being thin, watery, and offensive. Nausea and vomiting had ceased. Through the night there was considerable hemorrhage, the blood oozing from the mucous membrane of the gums and posterior nares, and also from the nose, the plugs not entirely controlling the hemorrhage. I again removed the tampons from the nostrils and the hemorrhage was very profuse. I repacked both nostrils with absorbent cotton saturated with a solution of aceto-tartrate of aluminium. This controlled the nasal hemorrhage but a slight oozing of blood continued from the mucous membrane of the gums. Menstruation had ceased and the urine remained the same except that it contained more blood. For the purpose of isolating the bacilli several large test-tubes were carefully sterilized. A catheter was then employed under strict aseptic precautions and about fifty cubic centimeters of urine were thus obtained. The urine was very clear in color, decidedly acid in reaction, and contained one-half of one per cent. of albumin; the specific gravity was 1028. It was then centrifugalized in sterile tubes, the sediment revealing hyaline and granular casts, also an immense number of red blood-cells, and the peculiar bacillus above mentioned. Immediately after obtaining the urine I inoculated a tube of nutrient gelatin, one of agar-agar, one of potato, and also one of bouillon, all of which were transferred to an incubator, except the gelatin which was transferred to a Petri dish and allowed to develop at room temperature. At the time I also thoroughly sterilized the flexor-bend of the elbow, using the most rigid aseptic precautions, and drew from a distended vein about two cubic centimeters of blood with which I inoculated a second series of the above-mentioned tubes. The blood-count was as follows: Red cells, 3,200,000 per cubic millimeter; white cells, 14,000 per cubic millimeter; hemoglobin, 35 per cent. The morphological appearances were unchanged. After my experience in piercing the lobe of the ear to obtain blood for examination I employed the finger-tip which gave me no trouble. During the day blood continued to ooze from the mucous membrane of the gums and from the cavity from which a bicuspid tooth had been removed.

On February 13th her temperature was 101.5° F., and pulse 120. She had a slight chill at 7.30 in the morning. The bleeding had continued all night from the mucous membrane of the gums, the roof of the mouth,

¹ A saturated solution of methylene-blue and a one-per-cent. solution of aqueous eosin.

² Indiana Medical Gazette.

and posterior nares. The blood-count per cubic millimeter was 3,100,000 red cells; 12,500 white cells; hemoglobin, thirty per cent.

After remaining in the incubator twenty-four hours the bouillon remained clear, but a cover-glass preparation revealed the same bacilli, and a hanging drop proved them to be non-motile. Upon the agar-agar there was a thin layer with smooth edges. There was nothing upon the potato or gelatin. The bacilli stained readily with Loeffler's methylene-blue and carbo-fuchsin, but were very poorly stained by Gram's method. The bacilli appeared in pairs, and were non-motile. At the end of forty-eight hours a thin hyaline growth appeared upon the gelatin, and a thin strip upon the potato. The results were exactly the same from the tubes inoculated with both blood and urine. I injected 1 cubic centimeter into the abdominal tissue of a rabbit. At the end of twenty-four hours the animal appeared sick and would not eat, and at the end of seventy-eight hours it died. An autopsy revealed hemorrhagic extravasation in the subcutaneous tissue, also in the peritoneum and pleura, and extravasation was also found in the ear muscles. The blood showed no tendency to coagulate, and cultures from the spleen, blood, and liver revealed the same organism. The appearance, behavior, and pathogenic characteristics closely resembled the bacillus of purpura hemorrhagica described by Kolb in 1891.

On February 14th the patient's temperature was 102.5 F., and pulse 140, the latter being very weak and compressible. The heart sounds were clear and distinct, and the spleen was distinctly palpable. The hemorrhage continued from the mouth, and there was considerable oozing from the nose. I repacked the nostrils, which operation greatly fatigued the patient, as the nose was very much inflamed from constant pressure. Upon removing the tampons the hemorrhage was as profuse as ever. The blood-count per cubic millimeter was: Red cells 2,300,000, and white cells 10,300. The poikilocytosis was, perhaps, more marked. There was an occasional nucleated red cell, and the same round, deeply stained bodies as before.

On the following day, the 15th, she vomited some blood. The examination of the blood showed the red cells to be 2,100,000 per cubic millimeter; white cells, 14,000 per cubic millimeter; hemoglobin, thirty per cent. The diazo reaction was still marked, as it had been each day from its first appearance. For the first time purpuric spots made their appearance on the legs and back. The patient was very weak and in a semicomatose condition. The left side of the nose and left eyelid were badly swollen and very painful. The bowels had not moved during two days, and she had a chill at 12.30 o'clock. On February 16th her temperature was 99.5° F., and pulse 130 and much stronger. The heart sounds were distinct, and the purpuric spots were increasing. The left eyelid and side of the nose were badly swollen and discolored. I repacked the nostrils, profuse hemorrhage following the removal of the tampons. On the 17th her temperature had risen to 102.2° F., and the pulse was 140, very weak but regular. The patient was able to re-

tain beef-juice, milk, and small doses of brandy. The nose was still badly swollen and ecchymosed. The urine did not contain albumin, but still contained granular and hyaline casts. The blood-count was: Red cells, 2,300,000 per cubic millimeter; white cells, 12,200 per cubic millimeter; hemoglobin, thirty-five per cent. The poikilocytosis was still marked. The nucleated red cells were not present, but the small, round bodies were still observed, and also the same degenerated condition of the leucocytes.

On February 18th her temperature was 101° F., and pulse 120, and stronger. There was less hemorrhage from the mouth and nose, but the removal of the tampons resulted as before. There was a disagreeable odor from the nose, notwithstanding the fact that strict anti-septic precautions were observed. The swelling of the eyelids and side of the nose was increasing. A free incision disclosed the presence of thin, ichorous pus and necrosis of the nasal bones and of the nasal process of the superior maxillary bones. The necrosed portions of bone were removed, and the wound packed with iodoform gauze. The blood-count per cubic millimeter was: Red cells, 2,400,000; white cells, 12,000; hemoglobin, thirty-seven per cent.

On the following day her temperature fell to 99.5° F., her pulse being 140, and very weak. The spleen was still distinctly palpable. The urine was of a clear straw-color, and did not contain albumin; the specific gravity was 1020. The diazo reaction was absent for the first time. Indican was also absent, this having been present part of the time during her illness, but not as a constant constituent. The blood-count revealed red cells, 2,100,000 per cubic millimeter; white cells, 14,000 per cubic millimeter; hemoglobin, thirty-two per cent. There was still present a marked poikilocytosis, the cells varying both in size and shape. The peculiar round bodies were still seen, but were not so numerous; the small mononuclear leucocytes greatly predominated over the polymorphonuclear variety. The character of the latter was very different, they being much smaller in size, with cell-xall and nuclei of normal appearance. I removed the tampons from the nose again, with less resultant hemorrhage, and examination revealed necrosis of the lower turbinate body of the left side, which was readily detached and removed. Both nostrils were irrigated with a 1 to 2000 bichlorid-of-mercury solution, and the tampons replaced.

On February 20th her temperature was 102.6° F. Purpuric spots appeared upon the chest, abdomen, and leg, and also behind one ear. I removed the tampons for the first time without hemorrhage. The wound on the side of the nose was doing nicely. The blood-count was: Red cells, 1,000,000 per cubic millimeter, and white cells, 13,000 per cubic millimeter. An examination of stained specimens showed profound anemia. There were several nucleated red cells, and the Maragliano reaction was marked. There were also many of the small, round bodies before mentioned. The appearance of the leucocytes was fairly normal. The urine was normal, there being neither albumin nor casts present, and the diazo reaction was absent.

On the 21st her temperature had risen to 104° F., and the pulse to 150. The heart sounds were weak but distinct. The skin was bathed in cold perspiration, and the general appearance was very bad. The urine contained a slight trace of albumin, and the bacilli, which had been absent for several days, again manifested themselves. Indican was also present, and the diazo reaction was again marked. The blood count was as follows: Red cells, 2,000,000 per cubic millimeter; white cells, 12,500 per cubic millimeter; hemoglobin, thirty per cent. The condition of the blood remained about the same, except that the bacilli had again made their appearance, being grouped together in pairs. At 12.30 o'clock she had a slight chill. On February 22d her temperature was reduced to 99.5° F., and pulse was 140. She had rested fairly well through the night, and her general appearance was better. The swelling of the side of the nose and of the eyelid had disappeared, and there was no more hemorrhage from the nose. The urine was again normal, containing neither bacilli, casts, nor albumin. The diazo reaction and indican were still absent. The following was the blood-count per cubic millimeter: Red cells, 3,800,000; white cells, 13,500.

From that time on the condition of the patient very gradually improved. The blood-count revealed an increase in number of red cells from day to day, and the character and appearance of the cells changed for the better. The leucocytosis diminished also, the small mononuclears greatly predominating. The purpuric spots gradually disappeared, and on the 26th of March I saw her for the last time, she being at that time convalescent. She is now a well and healthy girl.

The treatment in this case consisted of the administration of strychnin sulphate, which I used as soon as asthenia became manifest. I began with $\frac{1}{6}$ of a grain, and increased to $\frac{1}{3}$ of a grain, every three hours. For the hemorrhagic condition I employed aromatic sulphuric acid, 10 minims every three hours, and ergotin, $\frac{1}{4}$ of a grain every three hours. For the impoverished blood state I used arsenic in the form of Fowler's solution, 2 minims every three hours, and after the degenerated condition of leucocytes became so marked I prescribed nuclein (Auld's), one tablet every two hours. This, with small doses of brandy at times, as indication for its use arose, comprised the treatment throughout the case. I will here mention that after prescribing nuclein for thirty-six hours I detected a difference in the appearance of the polymorphonuclear cells. They increased in number, were of smaller size, and the degenerated condition, which had before been present, gradually disappeared. Still, it is difficult to assure one's self that this result was brought about by the nuclein, and I mention it only for the reason that the drug was prescribed, and the change became manifest after its exhibition.

MEDICAL PROGRESS.

Cerebrasthenia.—HIRSCHKRON (*Wien. Med. Blat.*, March 2, 1899) describes a special form of neurasthenia which he calls cerebrasthenia. It develops gradually with irritation and exhaustion of the nervous system which

at first disappears after rest and sleep but later becomes permanent. There is at first a condition of psychic weariness. If there is a hereditary taint, or the circumstances are unfavorable, the need for sleep increases and the depression is greater until every mental act becomes an effort and the patient is in no condition to make a decision of any sort. Nevertheless the memory is unclouded, the judgment is unimpaired. By making an effort the patient can rouse himself for a time. Since the cause of the trouble lies in overwork of the brain the condition is usually found in brain-workers who overestimate invariably their power of endurance.

The treatment must be principally one of toning up the general nervous system. The patient should above all things avoid all irritating conditions, such as anger, cares, excessive work, disturbed sleep, excitement, excesses, and alcohol. Treatment is naturally best carried on away from home, in a health-resort, preferably in high mountains. Hydrotherapy, electricity, and among drugs, the syrup of hypophosphites are mentioned by the writer with approval. To secure sleep the bromids are first to be tried and if they fail the stronger hypnotics, such as sulfonal or trianol. To secure sleep for such a patient is of prime importance.

An Interesting Bit of Nose Surgery.—ABBOT-ANDERSON (*Lancet*, March 11, 1899) was called upon to treat the nose of a cook who had cut off its tip while sharpening a knife. The patient appeared at his office without the fragment, and a boy was sent to the kitchen to look for it. His search was successful and the piece, which was a thin strip an inch long and half an inch broad at its lower end, was thoroughly washed in warm boric-acid solution and stitched in place with fine black-silk sutures. It had been severed for about thirty-five minutes. For four hours the nose was kept covered with compresses wrung out of hot boric-acid solution and was then protected from temperature changes by a thick dressing. The wound healed by first intention and the part was kept warm for some days afterward.

THERAPEUTIC NOTES.

Iodothyron in Thyroid Chlorosis.—JEULAIN in a monograph upon thyroid chlorosis, quotes the investigations of Hayem to prove that the thyroid gland is abnormal in most chlorotic persons. The affection is usually one of hypertrophy. He endorses this view not only because the symptoms of many chlorotic patients resemble those of exophthalmic goiter, but also because these patients were much benefited by the administration of thyroid extracts. His conclusions are these:

1. Among the chloroses due to auto-intoxication, in one which clinic and therapeutic observation explains as a thyroid auto-intoxication.

2. Clinically it is characterized by the usual symptoms of chlorosis, to which are added edema similar to that of myxedema, hypertrophy of the thyroid gland, and the signs of a commencing exophthalmic goiter.

3. Therapeutically this chlorosis disappears under treatment by iodothyron.

The iodothyron was administered in tablets of 4 grains

each, of which from three to five were taken per day, the amount being gradually increased for a considerable period, and then decreased.

Treatment of Crural Ulcers.—FREUDENTHAL (*Monats. für prakt. Dermat.*, February 1, 1899) after a long series of experiments with different remedies, comes to the conclusion that in the treatment of ulcer of the leg the particular remedy used is of far less consequence than the frequency with which the dressing is changed. No dressing ought to be left on more than three days, and it is better to change it every day or two. If the ulcer is sloughing or indurated it should be scraped out with a sharp spoon after thorough disinfection, or burned with the actual cautery, or nascent sublimate, obtained by mixing salt and bichlorid of mercury together. The patient should remain in bed for a week or two. After an ulcer has healed it should be watched for a time in order to protect the new tender skin from injury. A two-per-cent. solution of resorcin is valuable. Flannel and rubber bandages and rubber stockings are absolutely to be rejected on account of their irritating and sweating properties. A bandage of tricot woven in a long tube, five inches wide, is the most serviceable. After several weeks, from use and washing, such a bandage loses its elasticity and should be cast aside.

Morphin Combined with Cocain for Local Anesthesia.—CECI (*La Semaine Med.*, February 8, 1899) has used with complete success in more than a thousand operations a combination of morphin and cocain. The morphin is injected some minutes before the cocain so that its general effect may be felt before the injection of the latter. The dose of the morphin for an old person is from $\frac{1}{8}$ to $\frac{1}{4}$ of a grain and only one-half as much for a young person. The cocain is dissolved in a three-per-cent. boric-acid solution so that it shall contain one-half per cent. of cocain. Proceeding in this manner it is not necessary to obtain complete insensibility and the amount of cocain required is very slight. Ceci has, therefore, never had a case of intoxication and has not found it necessary to resort to the method of Schleich as his own procedure offers all of the advantages of the Schleich method. He has operated upon 362 hernias by this method, performing the radical cure, and prefers it in most cases to a general anesthetic.

Headache from Nasal Causes.—THOMPSON (*Jour. Amer. Med. Assoc.*, January 14, 1899) calls attention to the frequency with which headache is found to be due to nasal causes. Hypertrophic rhinitis, spurs pressing on the turbinate bones, deflected septum, or new growths, especially fibromata, or ulcers, or polypi, or purulent inflammation of the nasal or adjoining cavities are some of the common causes of nasal headaches. The disease in the nose which causes the headache is usually complicated by catarrh of the nasopharynx, pharyngitis, laryngitis, and bronchitis. The mucopurulent expectoration, cough, and dry throat in the morning are valuable symptoms. If understood they direct the physician's attention to the nose as the site of the primary disease. The coated

tongue of obstructive disease in the nose is apt to be misleading. Mistake in diagnosis and mortifying failure in treatment can be avoided by remembering that a coated tongue means mouth-breathing more often than it indicates dyspepsia. The diagnosis of headache from nasal causes will be suggested by the history of catarrhal symptoms and long-continued pain. Direct examination of the nose will show evidence of one of the causal diseases already described. If cocaineization of the nasal mucosa gives temporary relief of the headache there is greater probability that the cause is some disease in the nose. Touching the affected area in the nose with a probe often increases the pain if the headache comes from this cause. These tests, though, are not always diagnostic. One must sometimes depend on the results of treatment for a positive diagnosis.

Brewers' Yeast for Boils.—BROcq (*La Presse Med.*, January 28, 1899) has experimented with an old remedy much used by the people in the North of France and in England, namely, the ingestion of brewers' yeast for the cure of boils. He was able to cure himself of pustules to which he was subject by taking at the beginning of each meal a teaspoonful of the yeast in a glass of wine and water, or mineral-water. In the summer it is necessary to obtain it fresh every day. In the winter, according to the temperature, it will keep one or two days. If brewers' yeast cannot be obtained bakers' yeast may be taken in its place, but it is not so well borne by the stomach and the good results are not so promptly obtained. He tried this remedy upon ten other sufferers, nine of whom received a prompt benefit from it.

Wherein Lies the Success in Treatment of Ulcer of the Leg? FREUDENTHAL (*Monats. f. prakt. Dermat.*, No. 3, 1899) believes in the most exact cleansing of a varicose ulcer as well as the area about it with cotton soaked in formalin solution, or peroxid of hydrogen, etc. If there is a phlegmonous inflammation he applies compresses wet with a solution of acetate of aluminum, 4 per cent. If the ulcer is sluggish it should be curedtted or touched with a Paquelin cautery; but as patients usually object to such measures it is necessary to resort to topical applications. As an ulcer in a short time grows used to the particular application which is made upon its surface it is necessary to change frequently, not only the medication employed, but the method of its use, varying from a powder to a compress, or to a salve, or a plaster as the necessity arises. When the epidermis has once grown over the ulcerative area it is necessary to harden it by a resorcin salve (2 to 4 per cent.). A bandage of tricot should extend from the toes to the knee. Elastic stockings, rubber or flannel bandages, all exercise an unfavorable influence upon the skin and should be rejected.

Use of Apomorphin after Antitoxin Injections.—A Polish physician, ARNSTEIN by name, has employed apomorphin when, after injection of antitoxin for laryngeal diphtheria, the swelling and softening of the false membrane cause signs of suffocation. A hypodermic dose of $\frac{1}{15}$ of a grain induces vomiting and clears the larynx.

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SATURDAY, APRIL 8, 1899.

TRANSFORMATIVE POWERS OF EPITHELIAL CELLS.

We called attention recently in an editorial on "Epithelial Regeneration, Epithelial Overgrowth, and Cancer" (MEDICAL NEWS, March 25th) to Dr. Leo Loeb's work on this important subject, and to the interest it involved because of the light it might serve to throw upon the etiology of malignant neoplasms. We have since had occasion to comment on Dr. Roswell Park's excellent article (MEDICAL NEWS, April 1st) on the nature of cancer. While there are a great many workers in pathology and pathogeny who have adopted the conclusion that the cause of cancer is a parasite there are many good authorities who think that the cause of neoplasms in general will yet be found to be bound up with the essential vitality of certain cellular elements awakened into unusual activity by persistent or unaccustomed irritation.

Our special correspondent in this week's account of "Medical Matters in Chicago" gives an abstract of a paper read by Dr. Loeb before the Chicago Academy of Medicine at its last meeting. In the observations we quoted two weeks ago from "Pro-

gressive Medicine" Dr. Loeb brought out especially the power which regenerating epithelial cells have of bringing about the absorption of other cellular elements. Even cartilage was observed to disappear before it. The present observations seem to show that epithelial cells may transform themselves into connective-tissue cells. After all, there is in the present state of our knowledge of original germinal conditions no embryologic impossibility involved in this. Dr. Loeb's microscopic specimens seem to have exhibited various stages of this metamorphosis from epithelium into connective tissue.

Of course observations differing, as these do, so radically from views that have been accepted up to the present time require further substantiation. The work has been very carefully done, however, and is not the result of some sudden inspiration or unexpected discovery but is rather the climax of a series of painstaking studies.

How suggestive for pathogeny the new ideas may be is clearly apparent. The abnormal sympathetic growth of connective tissue in the midst of epithelial neoplasms has been one of the special mysteries of this obscure subject. The new light thrown on the essential vitality of epithelial cells is of the greatest interest. We can only hope that Dr. Loeb's plan of cultivating epithelial elements upon some such artificial culture-medium as agar or blood-serum will meet with the success he seems to anticipate. Such serious workers as now have the subject in hand, both in histology as well as in parasitology, cannot fail ere long to solve the mystery of the etiology of that dread disease, cancer.

**THE NEW YORK HEALTH DEPARTMENT AND
THE SALE OF SERUM.**

THE bill before the New York Legislature, known as the "Collier Bill," restraining the New York City Board of Health from selling its surplus serum, has been defeated in the Assembly by a decisive vote, and the Board is, therefore, at liberty to dispose of its surplus serum as may seem to it wise. The private, financial, and personal interests involved in securing the passage of this bill have stimulated the expenditure of a great deal of money and produced much acrimonious talk and many unseemly insinuations in regard to personal motives, not only in the discussion before the committee, but also in the lay

and medical press, especially in the *Philadelphia Medical Journal*. In a series of editorial articles beginning in the issue of February 4, 1899, this periodical makes a series of statements which, if even partially true, would require the most serious attention of the physicians and citizens of New York. It is alleged that the mortality from diphtheria in New York City is double that in any other large city, and that this is due to the poor quality of its antitoxin; that furthermore, the people are taxed for this antitoxin some \$80,000,—an amount of money many times that for which the same quantity of antitoxin of good quality could be obtained from private sources. A careful perusal of the articles show that they are founded on such a false interpretation of the official records that the attitude assumed could only emanate from a wilful misunderstanding. This remark applies not only to the number of cases of diphtheria occurring in New York, but also to the alleged great waste of money by the city laboratories.

To those who know the facts it is hardly necessary to allude to the personal attack upon those in charge of the laboratories as being interested financially in the sale of the serum. The motive for this attack upon the New York Board of Health is to be found, undoubtedly, in the effort to aid in the passage of the Collier Bill. The large distribution of a recent issue of the *Philadelphia Medical Journal* throughout New York State, for which it was undoubtedly handsomely paid, may also account for the ardor apparent in these editorials. We publish this week a candid statement over the signatures of Drs. Biggs and Park, which, while properly ignoring the insinuations as to personal financial interests, which are unworthy of the source from which they emanated, answers, to the satisfaction of any unprejudiced mind, the charges that have been made.

The question of selling the surplus serum, so far as legal enactment is concerned, seems to be settled for the present. The Board did wisely, considering the charges that were preferred, to exonerate itself by carrying on the contest to a successful issue. The throwing of mud will now probably cease. The economic question, however, of a subsidized institution entering into competition with private enterprises it is pretty well agreed that this is wrong. Except under extraordinary cir-

The extraordinary circumstances which have justified this procedure on the part of the Board of Health up to this time no longer obtain, and we suggest the propriety of the Board of Health now accepting this economic principle, and by official action discontinuing the sale of all serum.

The great work that has been done by the Board of Health in helping to establish diphtheria antitoxin as a specific in diphtheria, its influence as an educational center for the dissemination of knowledge upon the subject, and its advanced work in bringing antitoxic serum to a high grade of perfection, is recognized by the community, and there need be no apprehension lest New York City should fail to supply whatever financial support may be necessary to maintain and continue the work. Let both the rich and the poor of New York be supplied with antitoxin free of charge, if class legislation to the contrary be unconstitutional, but let the Health Board clear its skirts of any charges detrimental to the interests of private enterprise.

THE NEWER(?) PATHOLOGY AND TREATMENT OF LOCOMOTOR ATAXIA.

It is difficult to comprehend the motives that prompt some writers on medical matters to the publication of their views, especially when their remarks teach no lesson and convey no moral. Of course it is impossible for every writer, who essays to illumine or to be illumined by writing on a subject, to say something new, or even to say it in a new way, but this does not license him to present it in a light which he must know, provided he possesses the faculty of comprehension, is not founded in fact. In a not remote number of a sincerely esteemed and high-class medical journal there is an article, entitled "The Newer Pathology of Locomotor Ataxia, and Its Bearing upon Treatment," which would lead us to expect, in the first place, that there is a new pathology of tabes, and in the second place that it has some bearing upon treatment.

It is the consensus of opinion of neurologists whose opinions are worth having that the conception of an anatomical unit of the nervous system, the neuron, has aided very little in pathology and absolutely none in therapeutics. Yet in the article referred to above we are told that "It has wrought a

revolution in the management of diseases of the nervous system," a statement that is absolutely and unqualifiedly without any foundation in fact. Furthermore, the writer would have us believe that "an early diagnosis and a lively appreciation of the nutritional character of the primary degeneration enable us now to hold out a much more hopeful prognosis than was possible with the older conceptions of tabes," a statement which we contend is subversive of the truth. An early diagnosis, even though it be accompanied by the most vivacious appreciation of the "nutritonal" character of the disease, does not warrant a prognosis fraught with one more atom of hope than did such a diagnosis a decade ago before the neuron was heard of. To support us in this opinion, we have the written testimony of the leading neurological authorities of the world, of Erb, of Ferrier, of Raymond, of Dana, and others to the end of the list, who have delivered themselves upon this matter in recent times.

"All measures which conduce to a restoration of the normal metabolic function of the nerve-cells are to be instituted." Was it ever otherwise, we would ask? Did not Duchenne, Meyer, Wunderlich, Remak, Charcot, Ross, Seguin, and Hammond maintain the same necessity, though with less pretension? If we recall the fact that Erb contends that more than ninety per cent. of these cases are syphilitic, that Fournier teaches that ninety-five per cent. have a syphilitic history, and that Mobius and Marie aver that all cases of tabes are syphilitic, how, we ask, can any man have the effrontery to speak of the marvelous treatment and improvement of locomotor-ataxia subjects under antisyphilitic medication? If there is one question that more than another is considered debatable among neurologists to-day, it is: Should antisyphilitic treatment ever be instituted in tabic patients who have no manifestations of syphilis other than tabes? It is not improbable that if this question were put to vote a negative reply would be obtained.

ADVANCES IN INORGANIC CHEMISTRY.

THE past few years have seen most remarkable advances in inorganic chemistry. Previous to this scientists generally had about adopted the notion that until newer methods of investigation should be

invented, discoveries in inorganic chemistry would be limited to the description of new and unusual combinations of elements.

Some three years ago the scientific world was startled from its lethargy in this respect by the announcement that Lord Rayleigh and Professor Ramsay had discovered a new element in the air. Ramsay, the codiscoverer of argon, has described during the past year three other hitherto undescribed elements that exist in the atmosphere. These he has called krypton, the hidden, because so long concealed; neon, the new, and metargon, an element having certain analogies to argon. To these new atmospheric elements an American, Mr. Charles Brush, has added a fifth, etherion, so called because of certain points of resemblance to the ether that pervades all space. This substance has not yet substantiated its right to a place in the list of elements, for while certain very interesting evidence of its existence is at hand, as yet it has been impossible to obtain its spectrum.

Two other elements, it is claimed, have been discovered during the past year. One of them, polonium, has been studied in its sulphate, which occurs in pitchblende, a substance found in Poland, hence its name. It resembles uranium in its chemical properties and its compounds have been observed to emit like those of uranium an invisible radiation analogous to the Röntgen-rays. The other new element, coronium, was observed in the sun's atmosphere, and it is believed to be very much lighter than hydrogen.

We welcome sincerely this reawakening of the ardor of discovery in inorganic chemistry at the end of the century whose beginning saw such rapid strides in the just awakening science. The discoveries, and especially the newer methods brought into play, are of special interest to medical men because they open up a prospect of new applications of inorganic substances in therapy, and a better understanding of the therapeutic effects of old ones. The new discoveries in the air are particularly interesting because it had been thought that the ultimate elements of this substance at least were long known. They throw an interesting light on certain therapeutic opinions. There are those, and men of prominence, too, who have insisted that the ultimate constituents of such natural medicinal agents as the extracts of plants or

of the mineral waters were not known. What were known, they said, were merely the gross constituents; some of the finer components were missed entirely, and the method of their combination was a complete mystery. Hence the better results to be obtained very often from the crude drug, or its extract than from any of the chemical substances obtained from it. Hence, too, the better effect of the natural mineral water than of any artificial imitation of it. Whether the new era of discovery that seems to be opening up in inorganic chemistry will bring any nearer a definite solution of these important questions is for the future to decide, but any advance along the line toward the ultimate solution of them is encouraging and gives promise of great things for the new century.

ECHOES AND NEWS.

Tubercle Bacilli in Butter.—Dr. Petri of the Imperial Health Office in Berlin has found tubercle bacilli in 32.2 per cent. of 102 samples of butter examined.

Combined Business and Pleasure.—The patient may now take his cod-liver oil in the form of *pâte de foie de morue*, which, according to a French paper, is both effective and agreeable.

Antitoxin Bill Defeated.—The "Collier" bill to prevent the sale of antitoxin and other serums by the New York City Board of Health was defeated in the Assembly at Albany on March 30th.

For the Care of Sick Soldiers.—The Jersey City Hospital has received from the United States Government \$891 for the board and care of soldiers who were taken sick while passing through Jersey City.

Helmholtz's Brain.—Professor Hansemann of Vienna has examined the brain of the late Professor Helmholtz. Its weight was 1440 grams (about 45 oz.), and the convolutions were extraordinarily complex.

Rates for the Columbus Meeting.—It is announced that the Central Passenger Association has made a rate of one fare for the round trip for the Columbus Meeting of the American Medical Association in June.

Cerebrospinal Meningitis in Washington and St. Louis.—During the three weeks ending with March 27th there have been thirty deaths from this disease in Washington. A number of deaths due to the same cause are reported from St. Louis.

A Hospital Automobile.—An automobile ambulance has been presented to a Chicago Hospital. The vehicle weighs 1600 pounds, and is capable of a speed of sixteen miles per hour. This is probably the first electric ambulance ever constructed.

The German Red-Cross Medal.—This decoration has been created by the German Emperor at the suggestion of the Empress. The medal will be given to men and women belonging to the Red-Cross Association who distinguish themselves by their zeal.

Pensioner Regrets His Cure.—A Minnesota veteran, having given a public testimonial to a patent-medicine firm that its medicine has restored him to perfect health, is now trying to set himself right with the Pension Office, which proposes to take him at his word and cut him off the pension rolls.

A Summer Course in Medicine.—Cornell University Medical College announces that it will conduct a summer course for students of all grades during the summer of 1899. The course will cover the period from May 15th to August 1st, and the instruction will be chiefly clinical, with laboratory work and quizzes.

Typhoid Fever in Newark.—From March 1st to March 24th there were 260 typhoid cases in Newark, N. J. During the whole of the year 1898 there were but 179 cases. The source of infection for the present epidemic is the use of the water of the Passaic River during the water-famine resulting from the blizzard.

Tuberculosis in Tenement-houses.—On March 21st President Murphy of the New York City Board of Health ordered an inspection of tenement-houses with a view to ascertaining the number of cases of consumption among the inmates. The inspectors will distribute slips to the tenants, on which are printed directions as to prophylaxis, etc.

An Accidental Improvement.—The table of contents in a recent number of a well-known and much-liked contemporary begins as follows: Original Communications: Fractures Improving the Elbow-Joint. By turning to the page indicated, it appears that the "improvement" was "original" with the printer, and did not "involve" the writer of the article.

German Soldiers Gain in Weight.—Mueller of Berlin is authority for the statement that the German soldier gains on the average nine pounds' weight during the first three months of his service. A portion of this is lost during the summer maneuvers, but at the close of the twelve months he weighs on the average 4.5 pounds more than upon his entrance into the service.

Chicago Dental Charity.—The Chicago Bureau of Associated Charities has arranged to open a dental dispensary in each of its ten districts, the object being to furnish dental service to the poor at the smallest possible cost. Teeth will be extracted for ten cents. Filling will cost from fifteen to twenty-five cents. The dentists volunteer their services and the material used is furnished at cost.

Photographing the Stomach.—Drs. Lang and Melting of Berlin have presented an apparatus which they have invented for photographing the interior of the stomach. The tube, the end of which contains a microscopic camera

and an electric light, is inserted into the stomach. The negative is about the size of a cherrystone, but it can be enlarged. When the stomach is emptied and filled with air the photograph is made.

A Bipartisan Charities Board.—On March 30th a bill was introduced in the Assembly at Albany which practically makes the Charities Department of New York City bipartisan. The number of charities commissioners is increased to six, of whom two shall be from Manhattan and the Bronx, two from Brooklyn and Queens, and two from Richmond. In none of these instances shall more than one of the commissioners be of one political party.

Contagious Diseases on Trains.—The Jersey City Board of Health has appointed a committee to confer with the officers of all the railroads centering in Jersey City to the end that some means may be devised by which the Board of Health can be notified at once of the arrival of any person who is suffering from an infectious disease. Cars which may have come from places where infectious diseases are prevalent will be fumigated on their arrival at Jersey City.

Professional Secrecy in English Law.—A memorandum of the law of England relating to the obligation of medical practitioners with regard to professional secrecy has been prepared by Mr. Muir Mackenzie, at the request of the General Medical Council. It is declared that "a medical man not only may, but must, if necessary, violate professional confidences when answering questions material to an issue in a court of law." The law of New York is directly contrary to the English law in this respect.

Information as to Dr. Hjalmar Stromberg Wanted.—A letter has reached us asking for information as to the present whereabouts of Dr. Hjalmar Stromberg formerly of Ystad, Sweden. He came to this country, as we gather from a letter to us from his mother, in July, 1891, and was in a hospital in Memphis, Tennessee, during August and September of that year. Afterward he studied medicine for three years and graduated as a physician. Since 1895 nothing has been heard from him and relatives in Sweden are anxious for information.

Increased Pay for Army Nurses.—All contracts made with the nurses in the employ of the United States Government which were renewed on April 1st are at a salary of \$40 per month instead of \$30 for the nurses serving in the United States, and \$50 per month for those serving abroad. No one under twenty-five years of age will be received. All nurses, except those who are to nurse yellow-fever patients, must be graduates of a training-school, and must furnish a physician's certificate as to physical ability to undertake the work. Dr. Anita Newcomb McGee, Acting-Assistant Surgeon, has charge of the trained nurse department of the Surgeon-General's Office at Washington, D. C.

Aguinaldo as a Medical Student.—Our London contemporary, the *British Medical Journal*, is authority for the statement that for a time at least, Aguinaldo, the leader of the Filipino rebels (or patriots?) was a medical stu-

dent. His European cast of features has given rise to the story that he is a half-breed, though it is not known who his parents were. The honor of his paternity is attributed to a Spanish general. At fifteen years of age he entered the Pontifical University of Manila, where he worked under Professors Naldo and Buitrago. He afterward studied at the Victoria College (British) at Hong Kong. He was remarkable for his ability as a student but further than this nothing seems definitely known of his college career. It is not known for instance whether he pursued his medical studies up to graduation or not, so that we cannot say that he is more than a professional half-brother at most.

Another Strike among the Italian Medical Students.—The year has not been allowed to pass without the usual row between the students and faculty of at least one of the Italian Universities. There has been for a number of years a strained feeling between faculties and students over the question of an Easter examination. This has always kept things in a state of tension that made lapses into insubordination easy whenever anything occurred to set up a little vibration in the mutual relations of students and professors. This year it is at the University of Turin, and the cause is a revolt against Professor Fusari, the teacher of anatomy. Every effort has been made without success to induce the students to give up their opposition. It has been pointed out that Professor Fusari owes his place to a successful competitive examination, and that his work eminently fits him for the place, but to no purpose. Professor Bacelli, the Minister of Public Instruction, endeavored to call them to their senses in the matter by an admonitory *avviso* in his public capacity. This was no more successful in bringing about better feelings than previous efforts at reconciliation so the Government has decided to close the medical school for the rest of the session. This will cause the loss of a year to all the students in the medical department, and not alone to those in the school of anatomy who seem to be the real offenders.

CORRESPONDENCE.

THE NEW YORK BOARD OF HEALTH AND DIPHTHERIA ANTITOXIN—AN OFFICIAL STATEMENT.

To the Editor of the MEDICAL NEWS.

DEAR SIR:—Replying to your inquiries regarding certain statements which have been made in the *Philadelphia Medical Journal* and in the lay press as to the work of the New York City Health Department we gladly submit the information that you desire.

1. All of the experimental work upon diphtheria antitoxin as well as the work connected with its routine production for curative purposes has been entirely done by the bacteriologists of the Department of Health and has always been directly under our own personal supervision. The city authorities declined to make the appropriation necessary to provide special stables for the Department of Health for this purpose, and, therefore, the horses have

always been kept at the stables of the New York College of Veterinary Surgeons. They are, however, and have always been wholly under the supervision of the officials of the Department of Health.

2. The Department of Health in order to carry on its work has been compelled to produce its own vaccine virus and diphtheria antitoxin, for only in this way can it be always certain to have at command a sufficient quantity of active vaccine virus and high-grade diphtheria antitoxin. On several occasions the Department of Health has supplied large quantities of diphtheria antitoxin to private producers who have not had sufficient to supply a sudden large and urgent demand. The Department of Health can also produce diphtheria antitoxin much cheaper than it could buy this agent because of the large and constant demands upon it for use among the poor in Greater New York.

3. The Department administers antitoxin without charge in any case of diphtheria among the poor upon the request of the attending physician. It also gives diphtheria antitoxin free to any physician who states that it is to be used in the case of a patient to whom payment for it would be a hardship, and it further not only supplies its own hospitals but furnishes diphtheria antitoxin and all its other laboratory products free to all public institutions in Greater New York. The amount of antitoxin administered by its own inspectors constitutes a very small portion of that given free. In 1898 more than \$40,000 worth of diphtheria antitoxin and other antitoxins was given free while the sales for the year amounted to only \$13,963. No attempts have ever been made to increase the sales by advertisement or in any other way.

4. The reports from the Division of Bacteriology as to the number of cultures examined are entirely distinct from those made from the Division of Contagious Diseases as to the number of cases of diphtheria reported as occurring in the city. In the period alluded to in an editorial in the *Philadelphia Medical Journal* (*i.e.*, the first half of 1898) there were 705 cases of diphtheria and croup reported to the Division of Contagious Diseases. All of these cases were regarded by the attending physicians as diphtheria, a portion only were examined bacteriologically (no regulation of the Health Board requires bacteriological examination) and many of these were only reported as diphtheria after the examination by culture. Many cases, however, were so clearly diphtheria from a clinical standpoint that no cultures were made (for example, only very rarely are the fatal cases of croup examined bacteriologically). Others were doubtful from a clinical standpoint and were only considered by the physician to be diphtheria after the results of bacteriological examination were known. Many other doubtful cases occurred, but as the cultures showed no diphtheria bacilli they were not regarded by the attending physicians as diphtheria and were, therefore, never reported as such to the Division of Contagious Diseases and do not appear among the 705 cases reported for the half year. Therefore, only a portion of the cases examined bacteriologically appear in the 705 cases of diphtheria reported to the Division of Contagious Diseases.

5. As to the advisability of the Department of Health being allowed to sell its surplus product of vaccine virus, diphtheria antitoxin, and other antitoxins it should be kept in mind that these substances are solely employed for the preservation of life and the prevention of disease. They are so necessary for the public health and so difficult of preparation and preservation that they are almost universally considered to be in a different category from ordinary drugs and in Europe are largely made either under the direct supervision of the health authorities or in some semi-official scientific laboratories, such as the Pasteur Institute in Paris and the British Institute of Preventive Medicine in London. So far as this city is concerned, where most of the sales of department antitoxin are made, it may be said that it would be necessary to give antitoxin free to all persons desiring to use it, both rich and poor, if the Department did not have the right of sale. To give it free would merely cut off a revenue amounting to some thousands of dollars which is now used for purely experimental work in the laboratories and which, up to the present time at least, the city authorities have declined to appropriate for this purpose.

6. Those who are familiar with the work of the laboratory know how small a part of the expense is due to the simple production of diphtheria antitoxin. Even those engaged chiefly in its production give much of their time to the experimental work relating to the separation of the serum and its better chemical understanding. Others are working upon infections due to the streptococcus, pneumococcus, typhoid bacillus, tubercle bacillus, and other pathogenic organisms.

The work of the laboratories has always been open to inspection, and any information as to its methods has always been, and so long as we are in charge of it, always will be freely and gladly given to any who rightly apply for it.

Very sincerely yours,

HERMANN M. BIGGS,

Director of the Bacteriological Laboratory.

WILLIAM H. PARK,

Asst. Director of the Research Laboratory.

NEW YORK, March 29, 1899.

AUTOPSIES AND THE ANTIVIVISECTIONISTS.

To the Editor of the MEDICAL NEWS.

DEAR SIR:—In your recent editorial headed "Autopsies, the Antivivisectionists, etc.," you say: "One of the serious objections on the score of inhumanity, we suppose, that was urged against the management of the General Hospital at Vienna, by the zealous antivivisectionists at their recent meeting in Philadelphia, was that an autopsy is performed in the case of every patient that dies in the hospital. Like many statements made by the antivivisectionists, this is not entirely true."

I beg to assure you that there is not the slightest foundation for one word of this paragraph nor of another soon after, which is as follows: "The truly senseless phase of this discussion, so conspicuous at the recent

Philadelphia meeting, reveals the true inwardness of the antivivisectionist movement and its fanatical opposition, for certain merely sentimental reasons, to scientific advance."

At that meeting not only was there not a single word, that I can remember, spoken upon the subject of autopsies, but never in the whole history of the antivivisection movement, has there been the slightest objection made to them or to anything else which came strictly within the province of the medical profession and had no connection with our work. The only thing to which we do object, is the torture of helpless, unoffending animals, the infliction of which we consider is a grievous sin in the sight of a merciful God.

Yours truly

CAROLINE EARLE WHITE,

Cor. Secretary of Amer. Antivivisection Soc.
2024 CHESTNUT STREET, PHILADELPHIA.

[WE are sorry that the newspaper accounts of the meeting of the antivivisectionists should have led us into the error that Mrs. White points out and we are glad to be assured that the antivivisection movement does not oppose autopsies.

We have to apologize for a misstatement of what Mrs. White said at the same meeting of the Antivivisectionists with regard to experiments upon patients at the Vienna General Hospital. In this, too, the daily papers exaggerated what was said at the meeting, and quite changed its purport. That and the interviews on the subject at the time led us to suppose that bitter criticism had been indulged in at that meeting, while we learn that only certain extracts from foreign journals were read.

We cannot refrain from pointing out the mischief that is done by repeating unauthorized newspaper stories containing the most vague and general accusations against the great hospital that has done so much for modern medicine. They can only arouse bitter feelings, and can never lead to reforms, supposing there should be need of them. Many a physician interested in the prevention of cruelty to animals is deterred from expressing his feelings in the matter because it would seem to associate him publicly with those who are too ready to give credence and publicity to unsubstantiated statements about the medical profession and its relations to animals and patients.—ED.]

OUR PHILADELPHIA LETTER.

[From Our Special Correspondent.]

ANNUAL MEETING OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA—FORTY THIRD ANNUAL COMMENCEMENT OF THE PENNSYLVANIA COLLEGE OF DENTAL SURGERY—ELECTION OF THE PHILADELPHIA COLLEGE OF PHARMACY—THE WATER QUESTION AGAIN—HOSPITAL BEQUESTS—CHARITY-BALL PROCEEDS—STATE MEDICAL LAWS UPHELD—PERSONAL NOTES—HEALTH STATISTICS.

PHILADELPHIA, April 4, 1899.

JOHNSTOWN is to be the meeting-place of the forty-ninth annual meeting of the State Medical Society which will be held on Tuesday, Wednesday, and Thursday, May 16th, 17th, and 18th. The following addresses will be given: President's address, Dr. W. B. Lohman,

Johnstown; address in medicine, Dr. J. C. Lange, Pittsburgh; address in surgery, Dr. G. W. Guthrie, Wilkes-Barre; address in obstetrics, Dr. F. P. Ball, Lock Haven; address in hygiene, Dr. W. M. L. Coplin, Philadelphia; address in mental diseases, Dr. H. L. Orth, Harrisburg; address in laryngology, Dr. D. Braden Kyle, Philadelphia. Dr. George W. Wagoner, Johnstown, is Chairman of the Committee on Arrangements and Credentials and Dr. S. S. Towler, Marionville, Chairman of the Committee on Scientific Business.

The forty-third annual commencement of the Pennsylvania College of Dental Surgery was held last week, 113 graduates receiving diplomas.

The Philadelphia College of Pharmacy has elected for the ensuing year the following officers: President, Chas. Bullock; secretary, William N. Stern.

Acting Chief of the Bureau of Health Colonel Lewis J. Good believes he has discovered the source of pollution in the Schuylkill river, which is responsible in great part, at least, for the epidemic of typhoid which so far shows no signs of abating. The Manayunk canal from Glen Willow, where it starts, to the Schuylkill, at Manayunk, where it ends, was thoroughly inspected by Colonel Good and Dr. L. C. Wessels, the Bureau's inspector for that district, and it is believed that the trouble arises in this vicinity.

The movement or agitation in favor of pure water continues and well it may, with a total since January 1st of 4855 cases and 493 deaths from typhoid. The Board of Education has taken steps to utilize the \$13,000 appropriated by councils for water-filters to be placed in the schools. Dr. Morton and Dr. Williams, members of the Committee on Hygiene, are to make a special report to their fellow board members this week advising that not only should filters be purchased but means for boiling the water should be provided. To add to the general trouble of the pollution of the water it now appears that owing to broken-down and inadequate pumps the city is in danger of a water-famine which may occur at any time. If the facilities for pumping were improved enough water could be held in reserve to allow sedimentation to take place and thus the water would be less impure; with this fact in view it is proposed to patch up the pumps, prevent all waste of water and struggle along in this way until Providence sees fit to bring about the millennium and provide us with councilmen honest enough to give us pure water.

The will of George W. Lukens, which was probated last week, provides nearly \$50,000 to the Grand Lodge of Masons to endow a hospital for the Masons of Pennsylvania. The old Lukens homestead in Frankford is left for this purpose and should the Masons refuse the bequest, all is to be turned over to St. Mark's Episcopal Church for the same purpose. S. C. Blake of Santa Barbara, California, who died recently, bequeathed \$10,000 to the Orthopedic Hospital of this city. Still another bequest of last week is that of Jane McAnalley who died in St. Agnes' Hospital two weeks ago. St. Joseph's Hospital is left \$1000, St. Agnes' \$1000 and St. Vincent's Home Maternity Hospital \$2500.

The Hebrew Charity Ball Association has distributed \$16,368.50, the proceeds of the February ball, among the following institutions: Jewish Hospital Association, \$5237.92; United Hebrew Charities, \$5074.23; the Jewish Foster Home, \$4910.55 and the Orphans' Guardians \$1145.80.

The Philopatrian Ball was given for the benefit of the Free Hospital for Consumptives but owing to the blizzard the receipts barely met the expenses. For this reason a progressive euchre is to be given for the hospital on Monday evening, when it is hoped a sufficient amount of money will be raised to carry on the work as there is a great need for funds.

Owing to the energetic work of the Erie County Medical Society the Pennsylvania Medical Law has been declared constitutional and too much gratitude cannot be shown the society for its sterling work in pushing this case. Part of an abstract of the opinion given by Judge Walling of Erie, taken from the *Pennsylvania Medical Journal*, follows: "In the case of Commonwealth *vs.* Robert Lee Finn, the Medical Society of Erie County, acting as complainant, the jury found that Mr. Finn was practising medicine without conforming to the law. His attorneys thereupon contended that the law was unconstitutional, in that it did not provide for other schools of medicine than the regular, homeopathic and eclectic. The number of Boards of Medical Examiners which should be provided for, is a question for the legislature, and not for the courts. The act would have been valid had it only provided for one Board of Medical Examiners, and because the legislature had seen fit to broaden the field, and thus render it less difficult for the applicants to comply with its terms, cannot be a valid objection to the act. It is a mistake to assume that the act limits the practice of medicine in Pennsylvania to three schools. True, there are only three Boards of Examiners, but after the applicant has successfully passed one of these boards, there is no limit to the school of medicine in which he can practice."

Dr. Edward Schellinger has been appointed assistant surgeon on the visiting staff of the Cooper Hospital of Camden and Dr. F. Otis Bryant on the medical staff of the Chester Hospital to succeed Dr. D. W. Jeffries, mayor-elect of Chester.

Dr. D. W. Bland of Pottsville, died suddenly last week of heart disease. He was surgeon of the Ninety-sixth Pennsylvania Infantry during the Civil War and for nearly forty years had practised in Pottsville.

The total number of deaths occurring in Philadelphia for the week ending April 1st, as reported at the Health office was 504 of which number 128 occurred in children under five years of age. The total number of new cases of contagious diseases was 497 reported as follows: diphtheria, 59 cases with 11 deaths; scarlet fever, 33 cases with 3 deaths; typhoid fever, 404 cases with 43 deaths.

Mortality in New York State —There were 10,763 deaths in New York State during February, 1899. This number exceeds the mortality during February, 1898, by 1500. Grip is considered responsible for the increase.

MEDICAL MATTERS IN CHICAGO.

[From Our Special Correspondent.]

ORIGIN OF CONNECTIVE TISSUE FROM EPITHELIAL CELLS—IMPLANTATION OF URETERS IN RECTUM—DONATION BY MRS. OWSLEY—ANTITOXIN TREATMENT OF DIPHTHERIA IN CHICAGO.

CHICAGO, April 1, 1899.

AT the March meeting of the Chicago Academy of Medicine Dr. Leo Loeb read an interesting paper in which he discussed the possibility of the origin of connective tissue from epithelial cells.

He reported some observations of transitional stages between epithelium and connective tissue. These observations were made in connection with experiments on the transplantation of skin. In one series of experiments the skin was transplanted on superficial wounds; in another it was transplanted in the deeper layers of the ear of the guinea-pig. The transplanted skin was examined in many stages of its healing process.

In many places one gets the impression that the nuclei of the deeper epithelial cells were transformed into the nuclei of the connective tissue. The nuclei of the deepest epithelial cells may sometimes have a different morphological character. In such cases the nuclei of the underlying connective tissue have frequently forms corresponding to those of the nuclei of the epithelial cells. Not infrequently the nuclei of the deepest epithelial cells have no longer their usual vesicular structure, but have a structure more like that of the connective tissue, being more or less rod like in character. Secondly, at certain places beneath the epithelium one notices the fading away of the epithelial cells so that only their dim outlines may be visible. The regenerating epithelial cells are often closely connected by protoplasmic bridges with the underlying tissue. Especially in the hair-follicles beneath transplanted tissue there appears a gradual transition of the character of epithelial cells to the character of connective-tissue cells. Under certain conditions the regenerated epithelium presents the appearance of the "upper protoplasmic layer." The latter is characterized by its homogeneous transparent protoplasm and its lack of visible-cell limits. It possesses nuclei which do not have the ordinary vesicular appearance of epithelial nuclei.

Microscopic sections obtained from three experiments were described more in detail. They showed at different places appearances of gradual transition of epithelial cells to connective-tissue cells.

The nearer the cells were to the epithelium the more closely did they have the character of epithelial cells. Farther away they showed the typic character of connective-tissue cells. In a former paper the author had reported an observation of the epithelial tissue breaking through cartilage. Here the epithelial cells take a spindle form, being much drawn out, so that they could be easily taken for connective-tissue cells.

To these cases of transition the epithelial cells and connective-tissue cells have the same direction. It must be stated that at many places there is a sharp line of demarcation between the epithelium and the underlying

tissue, but frequently there is a direct connection no, such line of demarcation being present.

The papillæ in the regenerating or in the transplanted skins do not have the regular form as seen in the normal skin, but have the most irregular and grotesque forms. They may form an overhanging protuberance, the basal portion of which is separated from the epithelium by a straight line. This curious formation can be explained on the supposition that the papillæ are formed by the gradual breaking down of the epithelium.

Along the margin of the papillæ one sometimes observes the dim outlines of the original epithelial cells and nuclei which have the character of connective tissue, yet nuclei resembling the nuclei of the epithelial cells are situated in the direction of the nuclei of the epithelial cells. In a former paper the author had described how in certain cases the epithelium penetrated into the blood, but in such cases no connective tissue could be detected. Further experiments are in progress to study the action of different tissues on substances like agar, and blood-serum, in order to observe the regeneration under these conditions, and if possible to get means to isolate different tissues in this way.

Beneath the regenerating epithelium one very often finds a layer of fibrous tissue so closely attached to it that it appears to have been derived from the epithelium. This layer has the character of a connective-tissue lamella, and branches out beneath into the connective tissue. These are the main facts. The theory that epithelium can change to connective tissue would explain them. The pictures described above are not brought about by the epithelium being dragged into the connective tissue by the microtome knife. These microscopical appearances cannot be explained by the hypothesis that connective tissue changes to epithelium, because epithelium regenerates only in connection with epithelium. They might be partially explained by the supposition that connective tissue from beneath grows upward and forms a connection with the overlying epithelium. But in a number of cases we observe that the cells near the epithelium are much more like epithelial cells than the cells far away. This fact must be explained. And, in addition, the peculiar forms of the papillæ cannot be produced by the destruction of the epithelium through connective-tissue cells. If that were the case we should expect to see much more frequently that cells of one character, namely, connective-tissue cells, penetrate into and mingle with cells of another character, namely, epithelial cells.

Embryological facts do not exclude the possibility of the above-given interpretation. A closer analysis of the term germ layer, as has been given in a paper of Braem, shows us that the term has by no means such a fixed meaning as was formerly thought.

At the meeting of the Chicago Gynecological Society, held March 17th, Dr. Franklin H. Martin exhibited specimens and made a further report of implantation of ureters into the rectum. The new operation has for its object the making of subsequent infection of the ureters and kidneys impossible after double implantation of the

ureters into the rectum. The post-mortem findings in experimental operations for uretero-rectal anastomosis where no effort was made to provide for valve formation show unmistakable signs of infection of the kidneys due to ascending infection through the ureters. He has operated upon nine dogs by his new operation, two of which recovered. The paper deals with the report of the first dog in the second series which lived, that is, the one operated upon after the improved method. The dog was operated upon December 22, 1898, and was anesthetized and killed March 11, 1899, having lived nearly three months.

The principles of the operation are: (1) The ureters empty into the bowel in the direction of its long diameter, and from above downward, so that the urine is discharged in the direction taken by the fecal current. (2) The ureters are buried in the walls of the rectum for a distance of an inch or more longitudinally, so that in the act of defecation the fecal mass will squeeze the ureters and close them by its pressure on the mucous membrane. Moreover that pressure is exerted from above downward in the direction of the onward flow of the urine, thereby emptying the ureter by a milking process. (3) The ureters are further protected by the muscular coat of the intestines, this is accomplished by surrounding them in their longitudinal course through the intestine to the extent of two centimeters by the circular coat of the bowel. This muscular coat of the bowel in acting from above downward, milks the urine downward and holds the ureters closed when the rectum is aiding in defecation. When the contraction and closure due to the defecation are over the urine will spurt forth with considerable force acting as its own cleanser. (4) The ureters are implanted in the lower bowel which is normally empty except at defecation.

A preliminary report of bacteriological findings during life and post-mortem in the case of implantation of both ureters into the rectum was given by Dr. F. Robert Zeit.

In the discussion of Dr. Martin's paper, Dr. Reuben Peterson stated that some four or five months ago he had under his care a case of malignant disease of the bladder. Thinking that possibly the extirpation of the bladder would be necessitated he perfected himself in the technic of implantation of the ureters in the rectum. He performed the operation on a dog who promptly died. A second examination of the case convinced him that the disease was too far advanced to warrant total extirpation of the bladder. But his interest was aroused in the subject and he has been experimenting upon ureteral implantation ever since. He is not prepared to report definitely regarding either the technic of his operations or their results. He confesses, however, that he cannot take as favorable a view of it as Dr. Martin does, if by favorable is meant that there is hope that the operation may be applicable to the human subject. From his experience of this operation on the lower animals, he does not feel justified in implanting the ureters into the human rectum. Final judgment should be reserved until an opportunity is had of examining many specimens of the kid-

neys and ureters of dogs who have lived months after the operation; then and only then will surgeons be in a position to decide upon the merits of the operation.

Mrs. Heaton Owsley, representing the heirs of the Carter H. Harrison estate, has presented \$8700 to the Mary Thompson Hospital for Women and Children. The money will be held in trust, and the interest applied to the maintenance of a room to be known as the Carter H. Harrison room.

The record of the antitoxin treatment of diphtheria of the Chicago Health Department for the past four months—November and December, 1898, and January and February, 1899—is even better than that heretofore published, showing a reduction of mortality to only 4.78 per cent. in 418 cases. There was no deaths in 129 cases treated with antitoxin in the first or second days of the disease, and there are only three among 114 on the third day, a percentage of 1.23 in a total of 243 cases treated in the first three days from the onset. These records deal exclusively with the gratis treatment of diphtheria among the poor and under the most unfavorable conditions, and do not include the cases removed to hospitals. Thirty-eight or 9 per cent. of the cases required intubation, with 30 recoveries and 8 deaths, a mortality percentage of 21, or less than $\frac{1}{3}$ of the average deaths-rate of all cases before the introduction of the antitoxin treatment. The constantly decreasing mortality statistics also indicate that the use of the antitoxin treatment is increasing in private practice, and that Chicago physicians are employing this method more generally and successfully than any similar number of their profession in any part of the world.

OUR LONDON LETTER.

[From Our Special Correspondent.]

AMAZING ADVICE FROM THE LAY PRESS ON INFLUENZA—THE PRESIDENCY OF THE ROYAL COLLEGE OF PHYSICIANS—AGAIN THE NEW "ORDER OF MERCY"—THE CHAIR OF PHYSIOLOGY IN THE UNIVERSITY OF EDINBURGH—EMOLUMENTS OF UNIVERSITY CHAIRS—VARIOUS NEWS ITEMS OF INTEREST.

LONDON, March 24, 1899.

THE influenza still subtends a large arc of the public visual angle both lay and professional, although it is fortunately now diminishing both in extent and intensity. An amusing feature has been the oracular advice of the daily press in regard to the prevention and mitigation of the disease. The *Daily Chronicle* one day editorially Solomonizes to the effect that "people do not get serious attacks of influenza who keep their blood well alkalinized with potash" whatever that may mean. Two days later it semi-editorially "hedges" by quoting from "one who speaks with authority" the awful warning that there is danger in the use of potash salts of any kind "as the smallest amount of free potash formed by the interaction of the potash salt with other mineral salts in the blood—is the cause of heart failure!"

This "Daniel come to judgment" must be either a freshman medical student or an amateur dabbler in

physiology who has been reading of Claude Bernard's classic experiment of stopping the frog's heart in systole by a potash solution, a result which we need hardly say has never yet been paralleled in the human body even under the most heroic "tertiary" doses of the iodid.

Truly a little knowledge is a dangerous thing. This solemn warning proves, however, to be simply Daniel's introduction to a remedy of his own, repeated doses of a one-per-cent. solution of common salt which he avers to be "the natural and normal remedy for preventing and curing the disorder." It is to be taken in "frequent portions until a reduced watery state of the organism" is attained. A cheerful and convivial remedy but one which is even more dangerous than the potash according to Daniel's own logic, for, have not thousands of deaths in the human family been attributed to breath-failure, due to salt-water in sufficient excess to produce precisely a "a reduced watery state of the organism"?

The annual election of a president for the Royal College of Physicians is at hand and as the present incumbent, Sir Samuel Wilks, has announced that this being his third term he will not allow his name to be again presented as a candidate, the college is looking about for his successor. Some four or five names are mentioned of Fellows whose seniority entitles them to consideration. Sir William Broadbent, Dr. W. H. Dickenson (of albuminuria fame), Dr. W. S. Church, and Dr. S. J. Gee, of whom Sir William Broadbent appears the favorite and most probable candidate. The presidency is the blue ribbon of the medical side of the English profession and it has come to be practically expected that its holder will be knighted at the close of his term, if that honor has not already been conferred upon him.

The *British Medical Journal* has a long editorial comment upon the Prince of Wales' new Order of Mercy which criticises it very much along the same lines as that of our last letter. It regrets both the necessity of such a movement, the manner of practically enforcing small contributions, the "snowball scheme" of charity and the granting of an order for what ought to be the spontaneous kindly impulses of humanity. Still it wishes the plan success as the need it has undertaken to fill is a crying one.

The lists have been formally opened for candidates to the Chair of Physiology in the University of Edinburgh left vacant by the death of Professor Rutherford. A number of quite distinguished names have already been presented, among which are those of Professor Schäfer of University College, London, well known for his superb histological work in the new "Quain"; Professor W. D. Stirling of Owens College, Manchester, and Dr. E. Paton of Edinburgh.

The emoluments of the chair are officially announced at \$7000 per annum. Not a few of the Scotch chairs are surprisingly well paid. The chair of anatomy in Edinburgh by dint of various "hereditary" grants and dues which have been accumulated is reported to be worth \$20,000 per annum. Several chairs in both Edinburgh and Glasgow draw from \$8000 to \$12,000 and

even in Aberdeen, far North as it is, a number of the chairs both scientific and medical run about \$5000.

In spite of our huge donations and legacies to universities and colleges, we are really falling behind in America in the matter of salaries, for much to my surprise, I find that the class of teachers who with us are getting \$2500 to \$4000 (and there are few enough of any class at the latter figure) here receive from \$4000 to \$6000. Even the German universities are becoming more liberal, for when in Berlin this summer several *privat doctent*s inquired as to the supposed large salaries in America and were greatly disappointed when they learned their real figure. The leading chairs in the University of Berlin are worth from \$10,000 to \$15,000 a year, chiefly from a share in students' fees.

The Scotch salaries come chiefly from old, long-established government grants or municipal funds, proof of the splendid public spirit which has always prevailed in poor but plucky Old Scotia in respect to education. The body which will elect Professor Rutherford's successor, known as the "Curators of Patronage," are seven scientists, four chosen by the Town Council of Edinburgh and three by the Court of the University. If England instead of endowing fat priests and progress-hating bishops had "established" education three centuries sooner, she might not have been compelled to draw so many of her best workers and thinkers from north of the Tweed.

The Medical Society of London has just celebrated its 126th anniversary by that most solemn and sacred rite known to the Englishman, a dinner. At the close of the speech-making, which was of a comparatively cheerful character, the President, Mr. Edmund Owen, presented the Fothergillian gold medal to Dr. Monkton Copeman for his work upon glycerinated lymph in vaccination.

Professor Burden Sanderson of Elsford delivered last week the Croonian lecture before the Royal Society upon "The Electric Concomitants of Motion in Animals and Plants."

Owing to the death of Professor Kanthack it is announced that no summer medical session can be held at Cambridge this year.

Lord Lister has been elected as an Associate of the Academie de Medecine of Paris. It is an amusing comment upon the force of "patriotism" even in the most sublimely scientific circles that Koch was also elected at the same meeting and that while Lord Lister's vote was unanimous and by acclamation upon Koch's several of the members abstained from voting.

The public is greatly concerned over the fact that nearly 35 per cent. of the recruits for the army during the past year were rejected on physical grounds, but as nearly half of these rejections were on account of defective teeth the matter hardly seems serious enough to talk of "racial degeneration." It will be remembered that our own army medical examiners rejected almost as many and for the same most frequent cause.

Mr. Frederick Treves, who resigned his surgeonship at the London Hospital on account of the pressure of his private practice—and because certain ancient and hide-bound rules and traditions would not allow him to dele-

gate the drudgery of his hospital work to assistants—has been appointed Emeritus Professor of Surgery, which honorary position involves the delivery of four lectures a year.

Mr. Justice Darling voiced the sentiments of the community at the late Chester Assizes when he protested against "sham death-sentences" and advised a grand jury in considering an abortion case not to bring in a bill of murder unless they thought the offense was committed with intent to kill.

Two cases of the use of preservatives in milk have recently been before the courts, one in Liverpool and the other in London. Formalin was used in one case and borax in the other and the addition admitted in both cases by the vendors. As usual the profession stultified itself by testifying "expertly" upon both sides of the question as to whether the said adulterants were harmful. One set of experts declared the drugs to be poisonous and capable of producing "diarrhea, indigestion and eczema," while the other averred them to be in the quantities used as harmless as common salt and of direct value in preventing decomposition. So the puzzled magistrates dismissed the cases. When are we going to have the sense to recognize that no non-dietetic addition of any foreign substance whatever to milk, cream or other perishable foods ought to be tolerated on the ground that it not only permits and covers up but puts a premium upon careless and dirty handling at every stage of its production and shipment?

Dr. Monkton Copeman's Nulvey Lectures on the "Natural History and Pathology of Vaccination" have just appeared in book form and are attracting wide attention. It will, we think, be news even to most medical men to learn that Jenner's original thesis that cowpox was smallpox modified by the tissues of the cow, has been experimentally verified by no less than fourteen different observers since 1801 including Dr. Copeman himself. Nearly all the lymph at present in use is the "descendent" of one or another of these inoculations, spontaneous cowpox being a very rare disease of late years, though apparently much commoner in Jenner's time.

From a study of the results of these inoculations Dr. Copeman finds that repeated inoculations of the first "cow-smalipox" from heifer to heifer are necessary before the disease becomes thoroughly transformed and the lymph safe for vaccination purposes. It was ignorance of this fact that led to the unfortunate reproduction of smallpox by vaccination by Chanveau in 1865 and our own Martin of Boston in 1860, hugely to the joy of the "antis." It also accounts for the fact, stated by Mr. Jonathan Hutchinson in discussion a few days ago, that in his early years of practice he had seen several cases of vaccinia which were in no respect to be distinguished from smallpox except that they did not prove infectious to others. He related a most disquieting experience of his own in which a former student of his reported to him the death of a child from an alleged "vaccination-disease" and offered to have the body sent up to his clinic for demonstration.

He accepted the offer but when the cloth was lifted

from the body in the presence of a theater full of medical men and students he found to his dismay that the case was in every detail one of malignant smallpox. He went home extremely unhappy and for a week after kept dreading to hear of an outbreak but to his great relief not a single case developed either among the audience present or in the family of the child. Dr. Copeman used monkeys extensively in his experiments and found that they were susceptible to both variola and vaccinia although the former was never fatal to them. He also gave his lymph the "variolation" test which its critics regret cannot be used for effective testing and standardizing, by inoculating monkeys which had recovered from vaccination with virulent smallpox virus, in every case with negative results.

TRANSACTIONS OF FOREIGN SOCIETIES.

British.

NON-PULSATI ON IN ANEURISMS AND THE TREATMENT OF ANEURISMS—AUTO-INTOXICATION AND ITS RELATION TO THE TREATMENT OF DISEASE—"PSEUDO-TUBERCULOSIS"—VARIETIES OF ECZEMA AND THEIR TREATMENT—VANISHING TUMORS—THE COMMUNICABILITY OF TYPHOID FEVER.

AT the Royal Medical and Chirurgical Society, February 28th, WALSHAM made some remarks on non-pulsating aneurisms, and on the extirpation of aneurisms in general. He described a case of slowly growing aneurism in the neck of a patient aged forty-eight years. No pulsation could be felt in the tumor, nor any bruit heard over it. A needle was thrust into it, but no fluid could be withdrawn. The swelling was considered glandular, and probably malignant, and was cut down upon for the purpose of removal. It was then found to be an aneurism of the common carotid. This vessel was ligated and divided, and the whole aneurismal sac dissected out and removed, the efferent vessels being ligated as they were exposed. The patient recovered. Non-pulsation in an aneurism is a rare symptom, and in this case did not seem to be easily explained since there was no leaking of the sac nor blocking of its mouth with clots. The operation described may be looked upon as the ideal method of treatment, and its risk is very slight. It is indicated (1) when there is insufficient room to apply a ligature to the artery on the proximal side, or when a proximal ligature is attended by great risk, as ligature of the innominate for subclavian aneurism; (2) when a number of large vessels communicate with the sac; (3) when other measures have failed to cure the aneurism; (4) when the aneurism, as in the popliteal artery, has become diffused, or rupture of the sac or gangrene of the limb is threatened; (5) when the setting free of the emboli, as in carotid aneurisms, would be attended by risk of cerebral softening. In these conditions this method of treatment is probably the best; but for an ordinary popliteal aneurism without complications, enucleation can hardly be compared with such a simple and usually successful procedure as ligation of the popliteal artery or even of the femoral at the apex of Scarpa's triangle.

GODLEE excised a popliteal aneurism, and the patient

had an annoying edema of the leg, more than is usually seen after ligation of the femoral.

GOULD had a patient with an aneurism of each popliteal artery. He ligated the vessel on one side and performed excision of the sac on the other. There was more interference with the circulation on the side where the femoral artery was ligatured at a distance from the aneurism than on the side where the aneurism was excised; for six months after the first operation the right leg felt numb, and no pulse could be detected in the tibial arteries, while pulsation returned in the tibial arteries on the left side three weeks after excision of the aneurism. He considered that it is not necessary to excise the whole of the sac, in cases in which it is adherent to a vein for example. In a nervous patient he had once tied the femoral, thinking thereby to cause less shock than by excision. Gangrene of the leg followed, rendering amputation necessary, which he was inclined to think might have been avoided had the sac been excised.

BOWLBY said that an examination of many museum specimens had convinced him that the artery, contrary to the general opinion, is more healthy near the aneurism than it is at some distance nearer the heart. This is especially true of popliteal aneurisms, which should therefore be ligated near the sac and not in Scarpa's triangle.

WALSHAM thought it better to remove the whole of the sac if possible as it facilitated the healing of the wound, and also because branches which open into the part of the arterial wall which is left might be overlooked and so give rise to secondary hemorrhage.

At the Medical Society, February 27th, MARTIN read a paper on auto-intoxication and its relation to the treatment of disease. The term is used to designate three different conditions: poisoning from the gastro-intestinal tract, the poisoning of chronic disease, and the poisoning from the glands of the body, thyroid, etc. With reference to the first form of auto-intoxication, it may be said that most of the intestinal bacteria are non-pathogenic as long as they remain in the intestine. If the products of putrefaction are absorbed the body is poisoned, but this process frequently passes from one of intoxication to one of infection of the intestinal wall or of the peritoneum by the germs themselves. Again in the normal processes of digestion bodies are formed which possess poisonous properties, and if they are absorbed without further change they may give symptoms of poisoning. In uremia it has been shown that the toxic properties of the urine are diminished and it may fairly be inferred, therefore, that poisons are retained in the blood which would normally be eliminated.

At the sessions of the Pathological Society, held February 21st, and March 7th, there was a discussion on "Pseudo-tuberculosis," a term which was used by the different speakers to cover a variety of lesions mostly occurring in animals. These lesions suggested tuberculosis either in their gross appearances, or in the fact that they contained bacilli which acted toward stains in a manner similar to that of tubercle bacilli.

FOULERTON said that it was a fallacy to suppose that there was anything truly characteristic about a tubercle,

since a similar lesion may result from the action of many different bacilli, just as an abscess may be produced by the action of several different organisms. But no one thinks of speaking of all the abscesses which are not produced by one particular germ as pseudo-abscesses.

HUTCHINSON admitted that the word "pseudo-tuberculosis" is unscientific, but he thought that it at least had the advantage of not committing the profession to a particular theory in the case of an obscure lesion. Names thus hastily given may later be found to be erroneous, as has frequently happened, for example with the word uremia.

At the Harveian Society, February 16th, WHITFIELD read a paper on varieties of eczema and their treatment, in the course of which he said that the evidence that eczema is of a parasitic origin is almost wholly clinical, and that while certain experiments tend to show that certain seborrheic forms of eczema are parasitic in their origin, that until the different microbes of the different varieties have been isolated, as has been done with the ringworm, it is better to group them all together as a seborrheic eczema. There are two main opinions as to the nature of simple eczema. One regards it as the outward manifestation of a constitutional disorder, and the other ascribes it to the action of some local irritant. The parasitic theory of simple eczema is as yet entirely unproved. In the treatment of supposed parasitic forms, antiparasitic remedies may be used much more freely than in simple eczema. In acute weeping eczema it is better to treat the skin with soothing lotions which have just enough antiseptic power to prevent the growth of any accidental contamination with cocci. When the discharge has ceased ointments can be used, and they should be firm enough not to run into the covering, and leave the surface dry. Later stimulating applications may be made to resistant patches, and it has even been recommended to scarify very old and thickened parts.

THORNE said that he attached more importance to toxic conditions of the blood in relation to eczema than Whitfield was disposed to accord to them, and he could not regard as valid the argument that if the kidneys were sound they must be innocent of mischief, because they might, by habit and regimen, be inhibited from performance of their normal function. He instanced the case of a woman who for seven years had suffered from a severe form of eczema palmaris with inflammation of the matrices and deformity of the nails. The total daily ingestion of fluids including tea, coffee, and claret was barely seven-eighths of a pint. In three weeks the disease was arrested by the use of an ointment containing ammoniated mercury, of a mixture containing grain doses of potassium iodid, and by the ingestion of two pints of water daily. The result had been maintained mainly, as the speaker believed by the continued use of the water, which gave the kidneys an opportunity to promote the purity of the blood.

At the meeting held March 2d, POWER read a paper on vanishing tumors. He mentioned in illustration three cases, one that of a cystic lymphangioma of the neck which had been noticed soon after birth, and which had

been tapped 150 times with a trocar and cannula. The tumor had disappeared after the removal of a portion of it. The disappearance of the remainder was preceded by three attacks of lymphangitis. In a second case the abdomen was opened to relieve the cause, if possible, of a marked increase in size of the liver of a child, associated with jaundice and fever. On the supposition that there was an abscess, a trocar was thrust into the liver in several directions, but no pus was obtained. The wound was closed and the patient recovered; all the symptoms, including the increased size of the liver, disappeared. Other cases were mentioned; one of a vascular growth in the pelvis, and another in the lumbar region, which were exposed by operation and thought to be sarcomatous, too extensive for removal. They disappeared completely in three or four months. Six or eight tumors developed in a man's scalp after a blow from a part of a fly-wheel. One was removed, and shown by microscopical examination to be a fibrosarcoma. Some of the others disappeared spontaneously. The speaker also pointed out the diminution of a hypertrophied prostate after removal of the testicle, and the atrophy or disappearance of adenoma of the breast as the result of pregnancy and lactation as illustrations of the spontaneous disappearance of tumors.

JULER mentioned a case of tumors of both orbits in which the microscopical diagnosis was sarcoma. They disappeared after the administration of mercury and iodid of potash.

DORAN mentioned the disappearance of fibromata of the abdominal wall in two cases which had come under his notice.

EASTES referred to the large number of vanishing tumors which are associated with some part of the genital tract, including the female breast. A striking instance was furnished by the uterine fibromyomata of middle life. Most of the disappearing tumors of the abdomen were fecal accumulations.

GUTHRIE thought the spontaneous disappearance of tumors might be due in some manner to the cutting off of the blood-supply, not in a manner which can be accomplished by surgery, but through the vasomotor system. This might explain the success which was said to follow the application of toads to cancerous breasts in the last century. The skin of a toad excretes phrynin, which is a powerful vascular astringent. It should not be forgotten that strong mental emotions may possibly affect the sympathetic system so as to cause a local constriction of blood-vessels. In this manner may be explained the miraculous cures of cancer at Lourdes and elsewhere.

At the Epidemiological Society, BOBBYER read a paper on ten-years' experience with typhoid in a midland town. Emphasis was laid on the personal communicability of typhoid. His conclusions were that (1) a sustained mean temperature of over 55° F. was followed by a higher autumnal rise in the prevalence of typhoid, and a cooler summer by a lower than the average; (2) that the disease was endemic in poor, crowded districts irrespective of elevation and geological formation, provided soil pol-

lution and like favorable conditions were present; (3) that even on foul made-soil and where pail closets were in use the better class of houses suffered less than the poorer; (4) that the incidence was far less in houses with water-closets than with dry conservancy, and heavier in those with middens than in those where pails were used, the differences being more marked in the poorer class of houses; and (5) that it was directly communicable by personal intercourse even in well-regulated hospitals, and more so in the confined dwellings of the poor.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held Thursday, March 9, 1899.

THE President, DR. WILLIAM H. THOMSON, in the Chair.

DISCUSSION ON SYPHILIS.

(Concluded from page 414.)

The third paper of the evening on

VISCERAL SYPHILIS IN CHILDREN,

was read by DR. A. JACOBI.

Children suffer not infrequently from syphilitic lesions of the lungs. The most frequent forms of the pulmonary affection are gummatæ and interstitial change. Not rarely it is complicated by pulmonary tuberculosis, the tendency to which at least is inherited from the mother, the syphilis coming from the father.

The heart is not often affected though cardiac gummatæ do develop at times and there is a syphilitic fibrous myocarditis. As regards the blood itself we are coming to realize more and more that profound essential changes may take place in this fluid tissue as the consequence of syphilis. Escherich pointed out the connection there may be between syphilis and pernicious anemia. Others have shown the etiological relation of the disease to pemphigus, symmetrical gangrene, etc.

The jaundice of syphilis in children occurs after 2 or 3 weeks, never on the second or third day, so that it is not hard to distinguish it from the icterus neonatorum which occurs within a few days after birth. Heubner's absolutely unfavorable prognosis in these cases seems scarcely justified by clinical facts, at least not by observations made here in America. Professor Jacobi himself has had two patients completely recover and they are still alive. The liver during the course of syphilis may be the seat of very various lesions so that the symptoms are most variable. The spleen is often affected by syphilis, enlargement and induration sometimes with tenderness having been observed, but it is to be remembered that the spleen may be palpable yet not be enlarged, the possibility of its palpation being due to ptosis or prolapse of the organ.

A very interesting and extremely important and practical phase of syphilis in children is the development of retarded syphilis. This is rather a metasyphilitic or para-syphilitic form of the disease than a frank manifestation of congenital syphilis. It is a metamorphosis of the

familiar affection that gives no symptoms until the children are five or six, or even seven or eight years of age. Then it is noticed that the children do not thrive, that they are underweight, puny, and delicate, pale and sickly, without the appetite and energy that normal children of their age should have. There is very little subcutaneous fat and its absence is easily noted in the pale thin skin through which the blue veins may be clearly seen. Such children are sometimes precocious mentally though they may, on the contrary, give evidence of intellectual hebetude.

It would seem from observation of such children that a true metasyphilitic condition exists. It is, however, almost without exception ameliorated by specific treatment; such cases are often very puzzling. They fail to improve on iron and arsenic or the improvement is but slight and not persistent. A course of mercury and the iodids, however, continued for three to four months brings improvement, and then this improvement may be continued by the judicious administration of arsenic and iron, by exercise, air, tonics, and other measures calculated to better the general health.

The last paper, entitled

SYPHILIS IN RELATION TO OBSTETRICS

was read by DR. EGBERT H. GRANDIN. He insists on thorough inspection of the genitals before gynecological or obstetric examination is made. It seems almost providential that more doctors are not infected from a neglect of this rule. Examinations are sometimes almost completed, in cases where inspection does not precede, before the doctor finds to his utter disgust and subsequent mental discomfort that his patient is undoubtedly syphilitic, and that great risk of infection has been run needlessly. As it is many a doctor in the city and in the country is suffering from syphilis acquired in this way. The necessity for the greatest precautions and of frequent reminders, for a certain familiarity with the danger begets forgetfulness, is evident.

Syphilis is the great cause of sterility whether relative or absolute, *i.e.*, sterility either with conception occurring but inevitably followed by abortion each time, or positive absence of conception. It would seem at times when the menstruation appears to recur regularly, that what really takes place at each or at least at certain menstrual periods is an abortion. The uterine mucosa, owing to syphilitic alterations in it, not having sufficient vitality to retain the ovum during the recurring monthly nervous impulse, proliferation, and fatty degeneration asserts itself. Habitual abortion is a misnomer if really considered to be a faulty habit of the organism as it is always syphilitic in origin.

Specific treatment in all cases of pregnancy where syphilis is known to exist in either parent is of the utmost importance. Active antisyphilitic treatment may even save an affected fetus, especially if the infection has come after the sixth month. No wet-nurse can justifiably be allowed to nurse a child no matter how clean seemingly its personal bill of health if either parent has had syphilis. The mother should be encouraged to nurse her own child especially in these cases of lowered vitality.

Syphilis constitutes the great menace to households, and while the speaker was not Utopian in his hopes for improvement in present conditions from legal enactment he is sincerely of the opinion that legal regulation will yet have to be appealed to to prevent the spread of specific disease. Legislation is much more needed in this matter than for tuberculosis which is at present attracting so much attention. Certain States, as Texas and Massachusetts, already have laws against syphilis. A notable attempt was made recently in a Western State to secure proper certification of the health of people before marriage. This may yet be considered as Quixotism, but some such legal regulation will surely come in the not distant future.

It is absurd to quarantine as we do against other and much less dangerous diseases and allow syphilis to spread absolutely without let or hindrance. It is a strange inconsistency due to certain mistaken notions of modesty and so-called propriety that whenever sexual questions assert themselves they are simply ignored. But this state of affairs cannot and will not be allowed to continue much longer without a serious attempt to solve the serious questions involved.

In the discussion, DR. H. H. SMITH said that the iodids do good in the treatment of syphilis in two ways: by their stimulation of absorptive powers and by their effect upon the circulation. They dilate the peripheral vessels and so lessen the strain upon the already fibrous heart. The iodid of potash as used in the Tuftel treatment for aneurism lessens the general blood pressure and so diminishes the tension on the arterial walls and upon the aneurismal sac.

DR. JACOBI said that iodid of potash has a wide field of therapeutic application outside of syphilis. The iodids are favorite drugs of his. After peritonitis and other inflammation of serous membranes they are of the greatest assistance in helping to carry off the inflammatory material that has been deposited. Non-specific glandular swellings may also be successfully treated by the same drug, though it will have to be administered for months. Patients suffering from these obscure ailments may be greatly relieved by a course of the iodids to which mercury in small amounts is sometimes added with great benefit. Potassium iodid often does good even in non-specific cirrhosis of the liver, and tabes dorsalis, though not always due to syphilis, may often be distinctly benefited by this same remedy.

DR. BIELAPOWSKI said that mercury, as well as the iodids, does good, not by acting directly against the virus of the disease, but by its action on the tissues. Hence it is that other chronic pathological processes in the tissues not unlike those produced by syphilis are benefited. Psoriasis lepra and tuberculosis might be mentioned.

Stated Meeting, Held March 16, 1899.

(Discussion on Syphilis Concluded.)

THE first paper of the evening, entitled

SOME SURGICAL ASPECTS OF SYPHILIS

by DR. FRANK HARTLEY, was read, because of his un-

avoidable absence, by the Assistant-Secretary, Dr. Hudleston. It will appear in a future issue of the MEDICAL NEWS.

The second paper, on

SYPHILITIC DEMENTIA AND PARETIC DEMENTIA AND TREATMENT OF SYPHILIS OF THE NERVOUS SYSTEM,

was read by DR. CHARLES K. MILLS of Philadelphia. He said that a better title for his paper would be "Syphilitic Insanities and Pseudo-insanities; Their Prognosis and Treatment, with Some Remarks on the Treatment of Syphilis of the Nervous System." In the consideration of syphilitic affections of the nervous system affections due indirectly as well as directly to the disease must be considered, *i.e.*, the parasyphilitic and metasyphilitic affections that have occupied so much attention of late must be considered under this head though they are not truly specific.

The forms under which insanities as a consequence of syphilis occur are, first, as toxic syphilitic insanities; second, as dementia paralytica which is really a parasyphilitic condition, and finally as an accompaniment of syphilitic pseudoparalysis. Syphilitic toxemias, with mental symptoms, may take the form of melancholia, of mania, or of stuporous dementia. The melancholic state of depression is really a consequence of the action of the toxins of the disease, and is not due to drugs nor to apprehension. It may often be complicated by other symptoms than those of typical melancholia. Especially is it often accompanied by neurasthenia. Not infrequently a suicidal impulse develops during the depression and patients may need careful surveillance.

The mania due to syphilitic toxemia does not differ materially from the ordinary mania of acute mental disease. The apathy that occurs in dement states is of other stuporous variety. It is to be remembered that any of these mental conditions may develop as the result of syphilitic toxins without the occurrence of a single symptom pointing to organic involvement. The eyes may be absolutely unaffected, the knee-jerks, and other reflexes absolutely normal.

That general paralysis is usually a result of syphilis seems clear to Dr. Mills, and he holds tabes and general paralysis to be varying and variously localized manifestations of an identical pathological process. Analogously, syphilitic pseudo-tabes and syphilitic pseudo general paralysis are comparable. Degenerative or true tabes and general paralysis are usually and remotely though not always post-syphilitic in origin.

The prognosis of general paralysis is absolutely fatal. The treatment can only be symptomatic and palliative, but the physician owes it as a duty to his patient to keep him out of the hands of quacks who but exploit his helpless mental condition and impose upon the sympathies of his friends.

Syphilitic pseudo-paresis, due directly to multiple syphilitic lesions, in the membranes of the brain, in its blood-vessels, in the nervous substance itself, and especially in the cortex has not so unfavorable a prognosis if treated early. The treatment, however, is just as hopeless if it is

undertaken too late for degeneration takes the place of inflammatory exudation and will not yield to remedies. It is to be borne in mind that such syphilitic pseudo-paralyses may occur at any time after infection. It may be that only a year or two will have elapsed, but they may supervene long years after infection.

The conclusions as to the treatment and its effects may be briefly stated thus: Meta- and parasyphilitic conditions are not helped but hurt by specific medication. Recent direct syphilitic processes in the nervous system, especially when they do not involve nervous elements primarily disappear as a rule under properly directed syphilitic treatment.

Those that run a subacute course are the most hopeful. Very acute processes may kill before specific medication has its effect so that there is need for vigorous treatment. Often a rapid reaction can be obtained that will save life even when things look hopeless.

Chronic syphilitic processes in the nervous system as, for instance, Erbs' syphilitic spastic spinal palsy never get entirely well. They react to specific medication but only to a certain degree, and all traces of the process are never entirely removed. True syphilitic pseudo-tubes is rare, but does undoubtedly occur. When recognized as such and properly and persistently treated its prognosis is not very unfavorable though time is an important element, and none must be lost.

With regard to the syphilitic insanities this may be said: when due to a pure toxemia they are, as a rule, perfectly curable, and react well to specific treatment. General paralysis and its mental manifestations are, of course, incurable. In general, it may be said here as in the case of the neurological conditions that if the mental conditions are directly specific and recent, they can be cured; if they are chronic and degenerative they cannot. In even favorable cases their persistence for any length of time makes the prognosis proportionately worse.

The next paper, on

SYPHILITIC AFFECTIONS OF THE SPINAL CORD,

was read by DR. BERNARD SACHS. He said that our knowledge of syphilis of the nervous system has advanced very much from the time when we used to make the diagnosis of the affection by the exclusion of all other causes. Syphilis of the nervous system is undoubtedly on the increase. The latest statistics seem to show that, excluding tubes and general paralysis, 15 to 25 of every 1000 patients suffering from syphilis have nervous affections from the disease. The increase in syphilis of the nervous system is undoubtedly due to the fact that the struggle for life has become more intense of late years, especially in large centers of population, and that the consequent exhaustion of the nervous system has left it less resistive to the invasion of disease processes. It has been argued that the increase is only apparent and due to better diagnosis, but this, while it is a factor in the larger statistics, does not account entirely for the larger number of cases reported in recent years.

It has been said that syphilitic nervous symptoms develop oftener among those whose original syphilitic symptoms were milder than usual, and Dr. Sachs' experience seems to agree with this. Whether early treatment really influences the development of later nervous manifestations or not is something we do not know. They de-

velop in those who have been carefully treated and do not seem to pick out especially those who have been carelessly treated.

We have learned to realize that the distinction between secondary and tertiary lesions does not hold in the nervous system. We may have cerebral symptoms during the first six months of the disease, and spinal symptoms may develop while the cutaneous lesions are still running their course. Certain undoubted cases have been reported where symptoms in the central nervous system developed before the primary lesion had disappeared.

The most frequent lesion in the central nervous system is the occlusion of blood-vessels by a syphilitic endarteritis. Vessels may not, however, be entirely occluded at once so that transitory symptoms may develop as a warning of the process that is at work.

The multiplicity of lesions and their fleeting, variable character are often the best diagnostic points of beginning syphilis of the nervous system. The multiplicity of lesions is at least as important in the diagnosis of syphilitic central nervous lesions as Dr. Fox showed it at a previous meeting to be for syphilitic cutaneous lesions. Suspicious symptoms are headaches, eye troubles, passing hemiplegias, apoplexy, especially in comparatively young patients without heart or kidney trouble. Dr. Sachs pointed out some years ago how valuable for the diagnosis of syphilis in puzzling conditions of the nervous system is the pupil. Further experience and observation has only served to confirm this opinion. It is in his opinion much more important and valuable as a diagnostic sign than the bony lesions or epitrochlear and other glandular enlargements that are usually looked for. The important pupillary diagnostic points are: (1) inequality of the pupils; (2) unequal response to light; (3) failure to respond to light (this, others have dwelt on, especially Jonathan Hutchinson); (4) a circularity of the pupil, especially on contraction, and occurring when there are no optic adhesions.

Silex of Berlin especially pointed out these as diagnostic points in obscure syphilis of the central nervous system: (1) choroiditis; (2) scars at the angle of the mouth; (3) irregular and early carious teeth. Vertigo is sometimes an urgent early symptom. In a Canadian physician who consulted Dr. Sachs some time ago after having been under treatment for all manner of supposed causes of the symptom at the hands of various specialists, his vertigo proved to be the only symptom of nervous syphilis that had as yet manifested itself. Syphilitic apoplexy, if thrombotic, affects especially the base at the interpeduncular space commonly, and ocular palsies and double or anomalous optic neuritis develop. This syphilitic double optic neuritis must be borne in mind because a double optic neuritis is sometimes considered pathognomonic of tumor.

For spinal lesions spastic palsy invading first one side then the other is very significant, and usually indicates a syphilitic basis for it.

Syphilitic pseudo-tubes may be diagnosed from true tubes by this tendency to affect one side more than the other. One leg will be more ataxic than the other, one knee-jerk or other reflex will be more affected than the other, one eye will be more affected than the other. In true syphilitic pseudo-tubes the pupils are often immobile—a very important sign which is not a mere clinical fancy but an important symptom often observed.

The fourth paper of the evening, on

OPHTHALMOLOGICAL ASPECTS OF SYPHILIS,

was read by DR. CHARLES STEDMAN BULL. It will appear in a subsequent issue of the MEDICAL NEWS.